

THE IRON AGE

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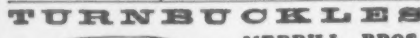
SAMSON SOLID BRAIDED CORD

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For *Remington* and all other
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The Civil War invented breech loading rifles
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Every new breech loader has had a U.M.C.
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*U.M.C. Cartridges carried the day at the
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See page 55

The Value of a Horse Nail

Is correctly determined by its actual holding and driving
qualities.

No horse nail exists which has the tensile strength or drives
as well as "The Capewell" nail.

The majority of the shoers of the United States long since dis-
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are made in Brass or Iron in a variety of types and sizes to
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sures. Made of new steam metal; high grade workmanship;
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"Swedoh" Cold Rolled Steel is unex- celled for Drawing and Stamping

THE AMERICAN TUBE & STAMPING COMPANY
(Water and Rail Delivery) (BRIDGEPORT, CONN.)

SEE
PAGE 28



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The Standard Babbitt of the World

We manufacture
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ROD
WIRE

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Water and Bar Fixtures

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**Ingot Copper, Block, Tin, Spelter,
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49 CLIFF STREET

NEW YORK

THE IRON AGE

New York, Thursday, October 28, 1909.

Philadelphia's High Pressure Fire System Extended.

The city of Philadelphia was one of the pioneers in the installation of high pressure central pumping stations for fire fighting purposes. In 1902 the city installed an extensive plant* for the protection of the congested wholesale district in the central portion of the city, and its experience has been so eminently satisfactory that contracts have recently been placed for the construction by the Deane Steam Pump Company, Holyoke, Mass., of 11 pumps, duplicates of those now in use. Each pump will have a capacity of 1200 gal. per minute, against a working pressure of 300 lb. per square inch. The pumps in connection with the Westinghouse vertical three-cylinder gas engines which operate them will be installed in a pumping station at the corner of Seventh street and Lehigh avenue, similar to the old station, a view in

Fig. 2 shows a section of the pump, and indicates a massive and solid construction in all parts. The main shaft or crank shaft is a heavy single piece special steel forging with the cranks set 120 degrees apart. The crank shaft is carried in four box section uprights which are in turn bolted to the bed plate, which bed plate also supports the cylinders and valve chests. The machine is entirely self contained and unusually free from vibration and noise. The gearing is of steel. The main gear is a furnace annealed casting made up in two parts, and the pinion is a machine steel forging. The teeth are machine cut from the solid blank.

The connecting rods are heavy steel forgings of marine type, both ends are adjustable, but the bearing surfaces are very large, so that little or no wear is perceptible after long use. In fact, bearing pressures throughout the pump on all rubbing or wearing surfaces are so low that there is little wear and practically no heating when the machines are operating at full speed and pressure.

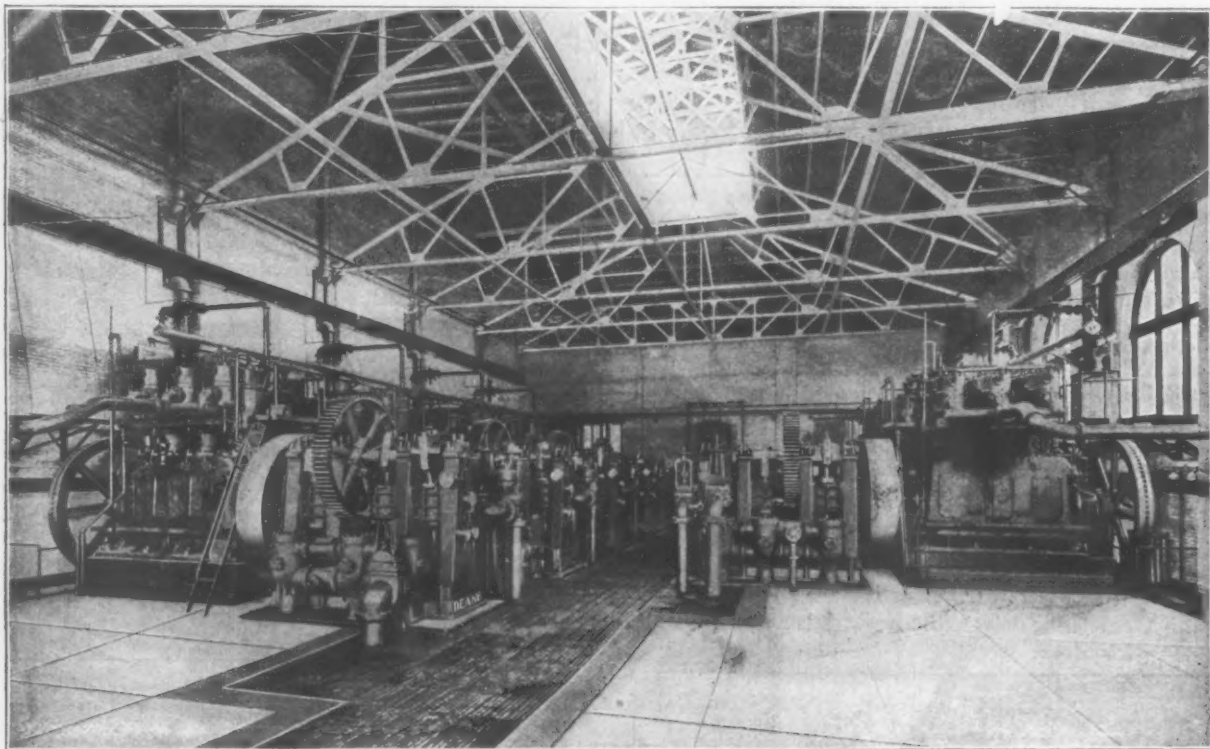


Fig. 1.—A View in the Station Which Is to Be Duplicated for Philadelphia's High Pressure Fire Fighting Service.

which is given in Fig. 1, and will furnish high pressure fire protection to the Kensington and Richmond manufacturing districts. Ultimately it is proposed to connect the high pressure mains comprising the old and new systems, which will extend the fire protection over a very large area, and will practically cover the whole manufacturing and wholesale district of the city.

It is the purpose of this article to describe somewhat in detail the Deane pumping units, as a description of the gas engines, pumping station, fire mains, hydrants and fire apparatus would be largely a duplication of the earlier article, which, however, did not treat very extensively of the pumps.

The pumps are of the so-called vertical triplex double-acting piston pattern power type, and each is directly connected through a single reduction of gears to a 280-hp. vertical three-cylinder, four-cycle Westinghouse gas engine.

* An Illustrated description of the plant and system was given in *The Iron Age* January 21, 1904, "Philadelphia's New Fire Fighting Service."

The water ends of the pumps are of composite design—that is to say, the valve chests and cylinders are cast separately. This is an especially desirable feature in a fire pump, in that any possible damage, due to accident, is localized and quickly repaired. The water passages and valve areas are very large to permit of low velocities and perfect action at high speeds. As is usual in pumping machinery for fire service where pumps are likely to stand idle for considerable periods, very careful attention has been given to the interior construction of the water end; first, to make sure that the pump will be fully primed at all times, and, second, that none of the operating parts will rust fast in place. The first requirement is fulfilled in the Deane pumps by making the water end of the submerged piston type, as is plainly shown in Fig. 2. The water cylinder is of necessity always full of water, both suction and discharge valves being located higher than the piston at its highest position.

Fig. 3 shows a completed pump previous to shipment

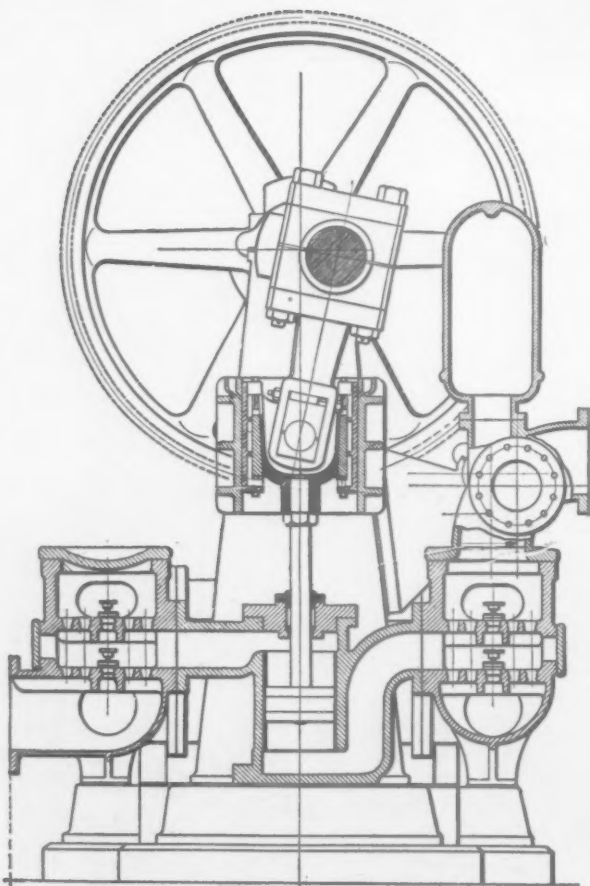


Fig. 2.—Sectional View of One of the Deane Triplex Pumps.

from the maker's factory. It will be seen in Fig. 1, which shows the old station, that there are no clutches between the engines and pumps. The gas engines are started by compressed air with the pumps working under friction load only by passing the discharge to the suction. As soon as the engine is started the motor driven by-pass valve is automatically closed and the pump is ready for service.

Any one of the pumping units in the present station can be put into operation in from 45 to 60 sec., as has been proved by repeated experiences. The entire plant can be put into service in less than 7 min.

A few words as to the cost of operation of the old Philadelphia plant may be of interest. Fuel has averaged about \$825 per year. Repairs have been practically nothing, consisting only in the replacement of a few rub-

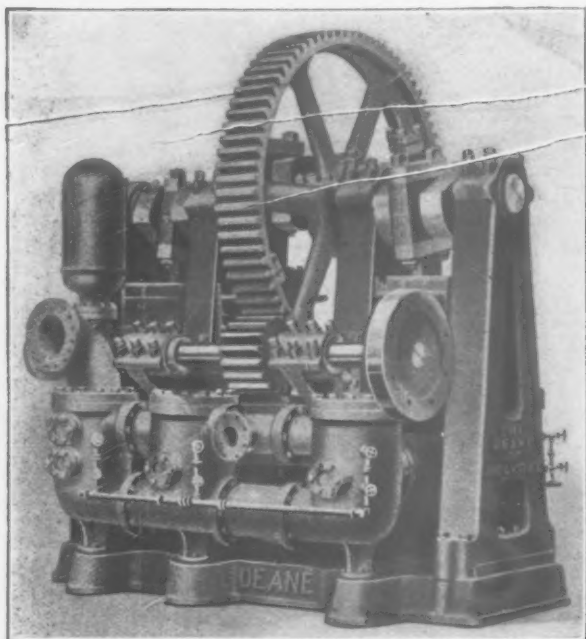
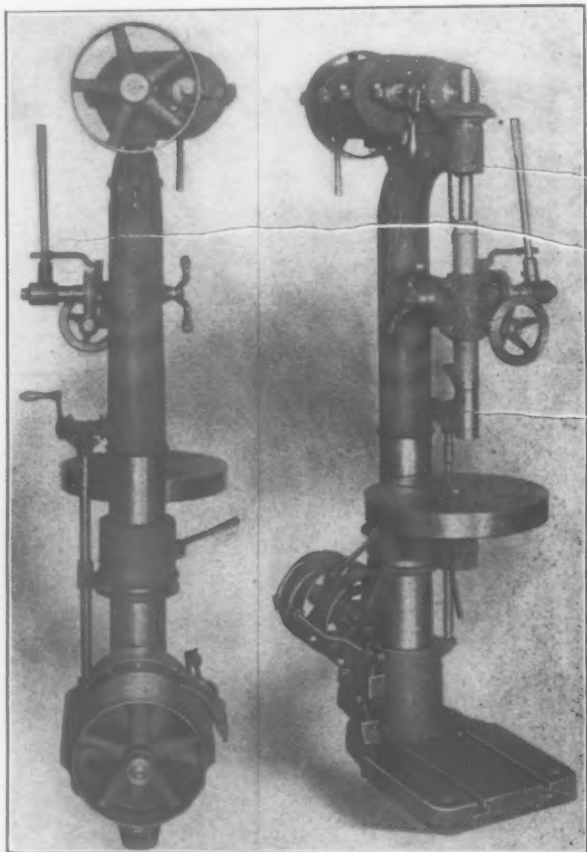


Fig. 3.—Exterior View of One of the Pumps.

ber valves in the pumps and some of the ignition parts and valves in the engines. No difficulty has ever been experienced in starting and no mechanical defects have developed in any part of the pumping machinery. A number of cities have followed Philadelphia's lead by installing triplex power pumping units for high pressure systems with uniform success. Pumps of the constant displacement type are declared to be absolutely reliable and dependable when called on, and high in efficiency and low in cost of up-keep.

A New Sibley High Speed Drill.

Front and rear views are given herewith of a new high speed drill brought out by the Sibley Machine Tool Company, South Bend, Ind., particularly for the use of automobile builders. It has some features that are new in upright drills. The most prominent of these is the change speed box located on the top of the column, elim-



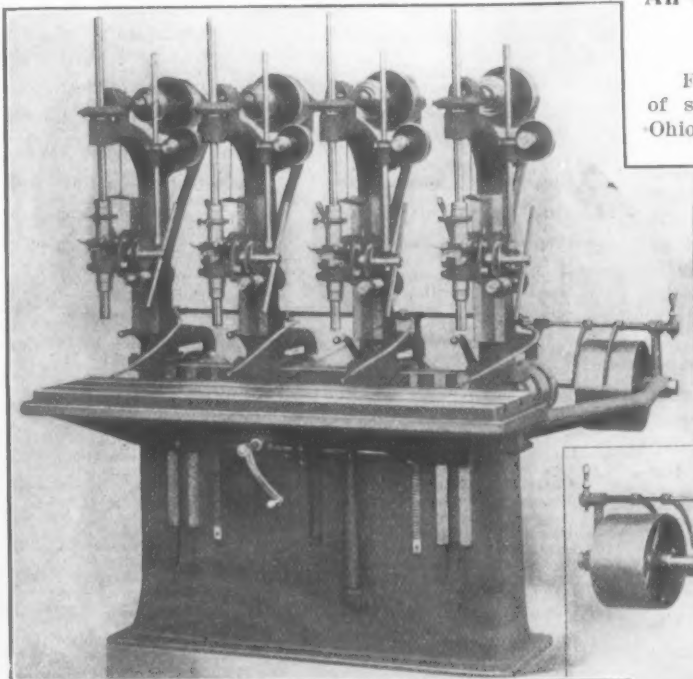
Front and Rear Views of a New High Speed Drill for Automobile Manufacturers Built by the Sibley Machine Tool Company, South Bend, Ind.

inating the cone pulleys with all their disadvantages. It affords eight changes of speed, any one of which may be instantly obtained without shifting of belts. The machine has ample power to drive high speed drills up to 1½ in. in diameter to their limit of drilling capacity. The change speed gears in the gear box run in oil, and all bearings are bronze. The large spindle has a No. 4 Morse taper socket, and has ball thrust and bearings. In the illustrations are shown the combined wheel and lever feed drill, but the tool is made also with geared power feed.

The German Steel Syndicate reports its shipments of "A" products in September at 438,904 metric tons, against 419,016 tons in August and 404,608 tons in September, 1908. The September shipments of blooms and billets were 136,487 tons (120,926 tons in August and 127,648 tons in September, 1908); railroad material, 165,225 tons (162,686 tons in August and 170,702 tons in September, 1908), and structural shapes 137,192 tons (135,404 tons in August and 106,258 tons in September, 1908).

A Cincinnati-Bickford 20-In. Gang Drill.

A new arrangement of 20-in. sliding head high speed upright drills in a gang of four is illustrated as built by the Cincinnati-Bickford Tool Company, Cincinnati, Ohio. Each machine is fitted in this case with power feed, automatic stop and quick return. Not only do the ma-



Front and Rear Views of a Gang of Four 20-In. Sliding Head Upright Drills Built by the Cincinnati-Bickford Tool Company, Cincinnati, Ohio.

chines have sliding heads, but, as will be noticed, the table also has a sliding movement up and down on the face of the column, which greatly extends the range of sizes of work that can be handled.

The table is continuous and amply T slotted. The sliding heads are balanced and can be quickly adjusted. The spindles are provided with ball thrust bearings and steel jam nuts which minimize friction and afford adjustments to take up wear. Three feeds to the spindle by power are provided, operated through pulleys and worm and bevel gears. The worm operating the worm wheel on the pinion shaft in the head revolves in a bath of oil contained in the worm box, insuring long life.

The spindle sleeve is graduated and on the power feed machines is provided with an automatic trip; the graduations are the means of setting the automatic trip collar. Gear guards are provided for all exposed gearing. The sleeves, shafts and spindles are ground and the bevel gears planed.

The drive is transmitted from a continuous shaft at the rear of the machine and tight and loose pulleys. Each spindle, by means of clutches, can be stopped independently by the lever shown at the front. An oil pump and piping are provided as shown to circulate lubricant from a tank or reservoir within the base.

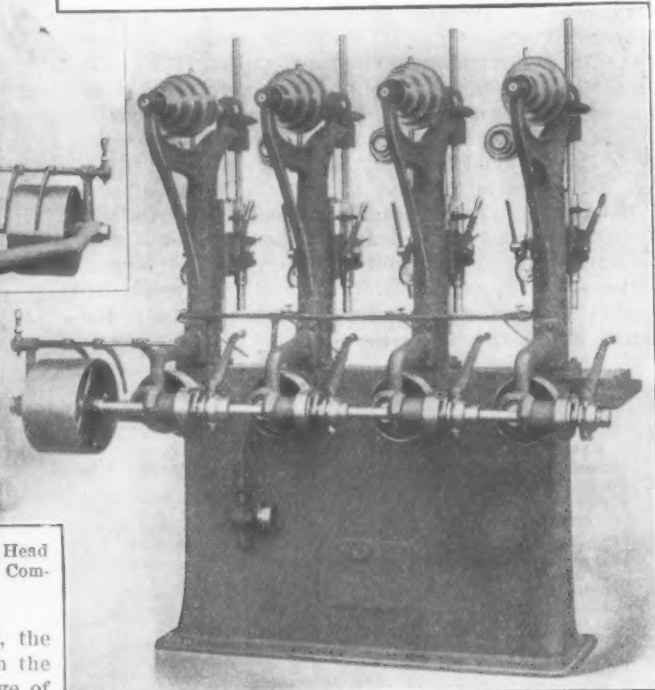
These machines are also furnished without power feed, in which form they can also be arranged in gangs; any number of spindles can be assembled as a unit. Other alternatives in construction are individual bases, both for the plain and power feed types, and quite a variety of tables.

New Cars and Locomotives.—The new demand for railroad cars which has recently appeared has added about 10,000 to the number booked by leading car companies. The New York Central order for 4000 cars was divided between the American Car & Foundry Company, 2700, and the Standard Steel Car Company, 1300. The Norfolk & Western ordered 2000 hopper cars, 500 box cars and 500 stock cars. The Toledo & Ohio Central has placed 500 box cars with steel underframes. The Lehigh Valley's order for steel underframe box cars went to

the Standard Steel Car Company. The Seaboard Air Line's order was for 1000 box and 25 stock cars. The Northern Pacific has ordered 1500 cars and is in the market for 450 Lidgerwood cars. The Southern Railway will buy 1000 box cars, and the Pittsburgh & Lake Erie is reported to be in the market for 1000 cars.

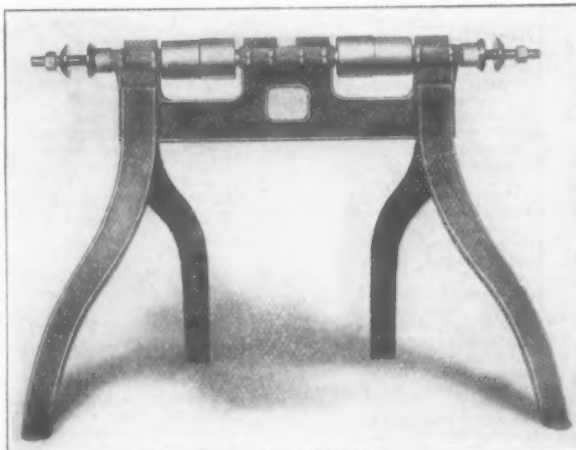
An Osborn Double Spindle Polishing and Buffing Lathe.

For buffing and polishing large work, such as parts of stoves, &c., the Osborn Mfg. Company, Cleveland, Ohio, has developed a unique double spindle lathe. The



two independent spindles and the shape of the front legs permit two men to work easily on the same machine without interfering with each other. When one workman stops to change his wheel or for any other purpose the other continues his work. This not only saves time, but also saves wear on driving belts, making them last, it is claimed, from 75 to 100 per cent. longer. The long, heavy bearings, the 1½-in. spindle and the all around substantial construction are features that especially adapt the machine to the class of work mentioned.

The machine requires a floor space of 60 x 32 in. The height from the floor to the center of the spindle is 38 in. The entire length of the two spindles is 62 in. The ma-



A Double Spindle Polishing and Buffing Lathe Built by the Osborn Mfg. Company, Cleveland, Ohio.

chines are furnished with either tight pulleys or with tight and loose pulleys, the latter making it possible to belt directly to a line shaft.

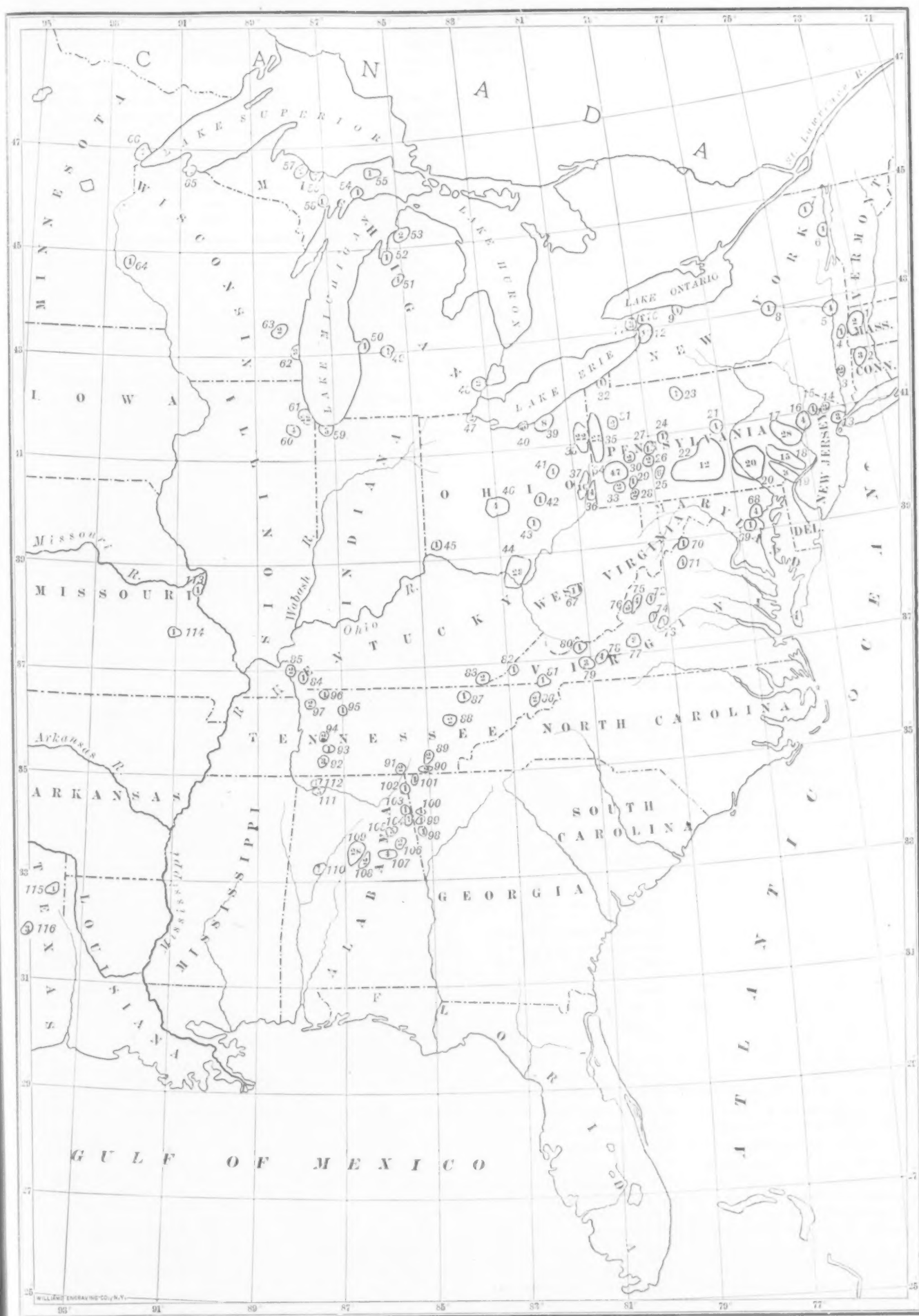
Distribution of Blast Furnaces in the United States in 1908.

The United States Geological Survey has recently published a map of the United States showing the location of iron blast furnaces in 1908. It was compiled by W. T. Thom from the Directory to the Iron and Steel Works of the United States, published by the American Iron and Steel Association. On the preceding page is a reproduction of the map, with the exception of the western portion of it. The omitted part shows 10 furnaces as follows: Six furnaces of the Colorado Fuel & Iron Company, Pueblo, Colo.; the Heroult electric furnace of the Noble Electric Steel Company, at Baird, Cal.; the Oswego charcoal iron furnace of the Oregon Iron & Steel Company, Oswego, Ore., and the experimental electric furnace for the production of pig iron set up by the Black Sand & Gold Recovery Company, at Hood River, Ore., and Irondale Furnace, at Irondale, Wash.

Below are given the names and locations of the 470 furnaces indicated on the map. It should be noted that the sizes of the spaces shown on the map are not proportioned to the number of furnaces in the respective districts, but indicate the geographical boundaries of the district as determined by the locations of the furnaces in it. The name of the furnace is given, first, in each case, then its location and the number of stacks:

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| <p>MASSACHUSETTS.</p> <p>1. {Cheshire, Cheshire—1.
Richmond, Richmond Furnace P. O.—1.</p> <p>CONNECTICUT.</p> <p>2. {Canaan, East Canaan—2.
Lime Rock, Lime Rock—1.</p> <p>NEW YORK.</p> <p>3. Poughkeepsie, Poughkeepsie—2.
4. Chatham, Chatham—1.
5. {Breaker Island, Breaker Island—3.
Burden, Troy—1.
6. Northern, Port Henry—1.
7. Standish, Standish—1.
8. Franklin, Franklin Springs—1.
9. Genesee, Charlotte—1.
10. Susquehanna Smelting Co., Lockport—1.
11. Niagara Falls Works, Niagara Falls—1.
12. Buffalo (16):
Buffalo—2.
Susquehanna, Buffalo—2.
Buffalo—2.
Buffalo—3.
N. Y. State St. Co., Buffalo—1.
Wickwire, Buffalo—1.
Lackawanna, Lackawanna—7.
Niagara, N. Tonawanda—2.</p> <p>NEW JERSEY.</p> <p>13. {Secaucus, Secaucus—1.
Newark, Newark—2.
Wharton, Wharton—3.
14. Musconetcong, St. N'ope—1.
15. Andover, Phillipsburg—1.
Hackettstown, Hackettstown—1.
16. {Oxford, Oxford—1.
Pequest, Buttzville—1.</p> <p>PENNSYLVANIA.</p> <p>17. Lehigh Valley (28):
Allentown Rolling Mill, Allentown—2.
Bethlehem, So. Bethlehem—6.
Carbon, Perryville—1.
Crane, Catsaquas—3.
Crumwold, Emaus—1.
Durham, Riegelsville—1.
Hokendauqua, Hokendauqua—4.
Keystone, Easton—1.
Lehigh, Allentown—1.
Lock Ridge, Alburtis—2.
Macungie, Macungie—1.
Palmerton, Palmerton—2.
Saucun, Hellertown—2.
So. Bethlehem, So. Bethlehem—1.
18. Schuylkill Valley (15):
Brooke, Birdsboro—2.
Henry Clay, Reading—2.
Keystone, Reading—1.
Leesport, Leesport—1.
Robesonia, Robesonia—1.
Sheridan, Sheridan—1.
Swede, Swedeland—2.
Temple, Temple—1.
Topton, Topton—1.
Warwick, Pottstown—3.</p> | <p>Isabella, Weybrooke—1.
Tidewater, Thurlow Station—1.
Primos Chemical Co., Primos—1.
20. Lower Susq. Valley (20):
Aurora, Columbia—1.
Bird Coleman, Cornwall—2.
Chickies, Chickies—2.
Colebrook, Lebanon—2.
Lebanon, Lebanon—2.
Lebanon Val., Lebanon—1.
Lebanon Reduction Co., Lebanon—1.
Lochiel—Harrisburg—1.
N. Cornwall, Cornwall—1.
Paxton, Harrisburg—2.
Steelton, Steelton—4.
Vesta, Watts—1.
21. Glen Iron, Glen Iron—1.
22. Juniata Valley (12):
Bellefonte, Bellefonte—1.
Colonial, Riddlesburg—2.
Earlston, Earlston—1.
Marshall, Newport—1.
Nittany, Bellefonte—1.
Rockhill, Rockhill Furnace P. O.—2.
Saxton, Saxton—2.
Eagle, Roland—1.
Hecla, Milesburg—1.
23. Emporium, Emporium—1.
24. Adrian, Dubois—1.
25. Cambria, Johnstown—6.
26. Josephine, Josephine—2.
27. Punxy, Punxsutawney—1.
28. Dunbar, Dunbar—2.
29. Scottdale, Scottdale—1.
30. Rebecca, Kittanning—2.
31. Franklin, Franklin—2.
32. Perry, Erie—1.
33. Donora, Donora—2.
34. Pgh. and Alleg. Co. (47):
Carrie, Rankin—7.
Clairton, Clairton—3.
Clinton, Pittsburgh—1.
Duquesne, Cochran—6.
Edgar Thomson, Bessemer—11.
Edith, Allegheny—1.
Eliza, Pittsburgh—5.
Isabella, Etna—3.
Lucy, Pittsburgh—2.
Nat. Tube, McKeesport—4.
Neville, Neville Isl.—1.
Shoenberger, P'burgh—2.
Soho Furnace, P'burgh—1.
35. Shenango Valley and Beaver County (25):
Alice, Sharpsville—1.
Alliquippa, Alliquippa—3.
Atlantic, New Castle—1.
Claire, Sharpsville—1.
Ella, W. Middlesex—1.
Fannie, W. Middlesex—1.
Hall, Sharon—1.
Midland, Midland—1.
New Castle, N. Castle—4.
Sharon, Sharon—1.
Sh'psville, Sharpsville—1.
Shenango, Sharpsville—5.
S. Sharon, So. Sharon—3.
Stewart, Sharon—1.</p> | <p>OHIO AND WEST VIRGINIA (WHEELING AND BENWOOD).</p> <p>{Belm't, Wheeling, W. Va.—1.
36. {Riverside, Benwood, W. Va.—2.
Top, Wheeling, W. Va.—1.
37. River Counties (O.) (10):
Bellaire, Bellaire—2.
La Belle, Steubenville—2.
Martins Ferry, Martins Ferry—1.
Mingo, Mingo Junc.—4.
Steubenville, Steubenville—1.
38. Mahoning Valley (22):
Anna, Struthers—1.
Cherry Val., Leetonia—1.
Grace, Youngstown—1.
Hannah, Youngstown—1.
Haselton, Haselton—3.
Hubbard, Hubbard—2.
McKee, Leetonia—1.
Mary, Lowellville—1.
Mattie, Girard—1.
Niles, Niles—1.
Ohio, Youngstown—6.
Tod, Youngstown—1.
Youngstown S. & T. Co., Youngstown—2.</p> <p>39. Cleveland (8):
Central, Cleveland—3.
Cleveland, Cleveland—2.
Emma—Cleveland—1.
Newburgh, Cleveland—1.
Upson, Cleveland—1.
40. Lorain, Lorain—5.
41. Dover, Canal Dover—1.
42. Zanesville, Zanesville—1.
43. Bessie, New Straitsville—1.
44. Hanging Rock (and Ashland, Ky.) (23):
Belfont, Ironton—1.
Bird, Culbertson—1.
Globe, Jackson—1.
Hamilton, Hang. Rk.—1.
Ironton I. Co., Ironton—1.
Jisco (Jackson Iron & St. Co.), Jisco—1.
Marting, Ironton—2.
Sarah, Ironton—1.
Star, Jackson—1.
Union, Ironton—1.
Wellston, Wellston—2.
Milton, Wellston—1.
Bloom, Portsmouth—1.
Center, Superior P. O.—1.
Hecla, Ironton—1.
Jefferson, Oak Hill—1.
Olive, Olive Fce. P. O.—1.
Buckhorn, Olive Furnace P. O.—1.
Ashland, Ashland, Ky.—2.
Norton, Ashland, Ky.—1.
45. Hamilton I. & S. Co., Hamilton—1.
46. Columbus (4):
Columbus Fces, Columbus—2.
Columbus Iron & St. Co., Columbus—2.
47. Toledo, Toledo—2.</p> <p>MICHIGAN.</p> <p>48. {Detroit Fce. Co., Det't—1.
Detroit I. & S. Co., Detroit—1.
49. Antrim, Mancelona—1.
50. Fruitport, Fruitport—1.
51. Cadillac, Cadillac—1.
52. Elk Rapids, Elk Rapids—1.
53. {Boyer City, Boyer City—1.
E. Jordan, E. Jordan—1.
54. Manistique, Manistique—1.
55. Newberry, Newberry—1.
56. Choccolay, Chocolay—1.
57. {Pioneer, Marquette—1.
Carp, Marquette—1.
58. Pioneer, Gladstone—1.</p> <p>INDIANA.</p> <p>59. {Gary, Gary—4.
Inland, Indiana Har.—1.</p> <p>ILLINOIS.</p> <p>60. Joliet, Joliet—4.
61. Chicago (22):
Federal, S. Chicago—2.
Iroquois, S. Chicago—2.
North Works, Chicago—2.
S. Chicago, S. Chicago—3.
So. Works, Chicago—11.
Union Works, Chicago—2.</p> <p>WISCONSIN.</p> <p>62. Milwaukee (3):
Bayview, Milwaukee—2.
Thomas, Milwaukee—1.
63. Mayville, Mayville—2.
64. Spring Valley, Spring Valley—1.
65. Ashland, Ashland—1.</p> <p>MINNESOTA.</p> <p>66. Zenith, W. Duluth—1.</p> <p>WEST VIRGINIA.</p> <p>67. Kanawha Falls, Glen Ferris—1.</p> | <p>MARYLAND.</p> <p>68. Maryland Steel Co., Sparrows Point—4.
69. Muirkirk, Muirkirk—1.</p> <p>VIRGINIA.</p> <p>70. Liberty, Liberty Furnace P. O.—1.
71. Gem, Clifton Forge—1.
72. Victoria, Goshen—1.
73. Virginia Electrolytic Co., Holcombs Rock—1.
74. Buena Vista, Buena Vista—1.
75. {Alleghany, Iron Gate—1.
Longdale, Longdale—2.
Princess, Glen Wilton—1.
76. {Lowmoor, Lowmoor—2.
Covington, Covington—1.
77. Roanoke (3):
Crozer, Roanoke—2.
West End, Roanoke—1.
Radford-Crane, Radford—1.
78. {Dora, Pulaski—1.
Pulaski, Pulaski—1.
Reed Isl., Reed Isl.—1.
Fosters Falls, Fosters Falls—1.
79. {Ivanhoe, Ivanhoe—1.
Max Meadows, Max Meadows—1.
80. Graham, Graham—1.
81. Bristol, Bristol—1.
82. Union, Big Stone Gap—1.</p> <p>KENTUCKY.</p> <p>83. Watts, Middlesboro—2.
84. Center, Hematite—1.
85. Grand Rivers, Grand Rivers—2.</p> <p>TENNESSEE.</p> <p>86. {Cranberry, Johnson City—1.
Embreeville, Embreeville—1.
87. La Follette, La Follette—1.
88. Rockwood, Rockwood—2.
89. Dayton, Dayton—2.
90. {Chattanooga, Chattanooga—1.
Clitico, Chattanooga—1.
91. S. Pittsburg, S. Pitsbg.—2.
92. {Allens Creek, Mannie—2.
Napier, Napier—1.
93. Rockdale, Rockdale—1.
94. {Aetna, Aetna—1.
Standard, Goodrich—1.
95. Cumberland, Cumberland Furnace P. O.—1.
96. Helen, Clarksville—1.
97. {Bear Spr'g, Bear Sp.—1.
Dover, Carlisle—1.</p> <p>GEORGIA.</p> <p>98. Tallapoosa, Tallapoosa—1.
99. Cherokee, Cedartown—1.
100. Rome, Rome—1.
101. Rising Fawn, Rising Fawn—1.</p> <p>ALABAMA.</p> <p>102. Battelle, Battelle—1.
103. Round Mtn., Round Mtn—1.
104. Rock Run, Rock Run—1.
105. Gadsden (5):
Etowah, Gadsden—2.
Gadsden, Gadsden—1.
Attalla, Attalla—1.
Quinn, Gadsden—1.
106. Woodstock, Anniston—2.
107. Talladega (4):
Clifton, Ironaton—2.
Jennifer, Jennifer—1.
Talladega, Talladega—1.
108. Shelby, Shelby—2.
109. Birmingham Dist. (28):
Alice, Birmingham—1.
Bessemer, Bessemer—5.
Ensley, Ensley—6.
Oxmoor, Oxmoor—2.
Pioneer, Thomas—3.
Sloss, Birmingham—4.
Trussville, Trussville—1.
Vanderbilt, Birm'ham—2.
Williamson, Birm'ham—1.
Woodward, Woodward—3.
110. Central, Holt—1.
111. Sheffield (5):
Hattie Ensley, Sheffield—1.
Lady Ensley, Sheffield—1.
Sheffield, Sheffield—3.
112. Philadel., Florence—1.</p> <p>MISSOURI.</p> <p>113. Missouri, So. St. Louis—1.
114. Sligo, Sligo—1.</p> <p>TEXAS.</p> <p>115. Jefferson, Jefferson—1.
116. {Sam Lanham, Rusk—1.
Star & Cresc't, Rusk—1.
Tassie Belle, Rusk—1.</p> |
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* Electric.



MAP SHOWING THE LOCATION OF IRON BLAST FURNACES IN THE UNITED STATES IN 1908.

(With the Exception of Six Furnaces in Colorado, One in California, Two in Oregon and One in Washington.)

Prepared by the United States Geological Survey.

The Work of the Patent Office.

WASHINGTON, D. C., October 25, 1909.—The forthcoming annual report of Commissioner of Patents Edward B. Moore discusses a number of interesting subjects in addition to presenting the statistics of the work of the office during a year of unprecedented activity.

The Work of the Year.

The record of the Patent Office for the fiscal year ending June 30, 1909, has never been exceeded. There were received 62,800 applications for patents, 1186 applications for designs, 192 applications for reissues, 2052 caveats, 7509 applications for trademarks, 1001 applications for labels and 338 applications for prints. There were 35,215 patents granted, including reissues and designs, and 4547 trademarks, 797 labels and 231 prints were registered. The number of patents that expired during the year was 22,779. The number of allowed applications, which, by operation of law were forfeited for non-payment of the final fees was 6763. The increase in the number of applications for patents over the preceding year was approximately 5000.

The statistics regarding trademark applications and registrations are of special interest. Under the so-called Bonyngue law, which went into force three years ago, a large number of old trademarks were reregistered, and for a year or two after the law took effect the number of applications exceeded 10,000 per annum. Practically all the old trademarks have been reregistered, and current applications represent what may be regarded as a normal volume of business. For the year 1909 they exceed 1908 by only 42, but as the figures for 1908 included a considerable number of reregistrations, it may be assumed that next year will record a much larger increase over 1909. The number of trademarks registered in 1909 showed a decrease of 1598, as compared with 1908, but this decline is also attributable to the fact that a large number of old trademarks were reregistered in 1908.

Treaties.

Concerning the treaties negotiated during the past year for the protection of American inventions in foreign countries, the commissioner says:

I am gratified to report that during the last year a treaty was negotiated with Germany, which provides that the working of a patent in one of the contracting countries will have the same force and effect, so far as avoiding the revocation of the patent is concerned, as if it has been worked in the country in which the patent was granted. This treaty has practically assured to American inventors the protection of their rights in Germany during the full period for which the German patent is issued, contingent only on the working of the invention in one of the two countries.

It is understood that Sweden has modified its laws to extend similar protection to other countries which do not require the working of the invention within a specified period, and negotiations are now pending with nearly all the European states for the promulgation of treaties of the same character. In order to assist in the negotiations of these treaties, I have been delegated by the Department of State, and shall visit the capitals of several foreign nations to assist, so far as is within my power, in the negotiations of such treaties.

Important International Convention.

Regarding the coming convention of the International Union for the Protection of Industrial Property, to be held in Switzerland, the commissioner says:

Congress at its last session appropriated the sum of \$10,000 to defray the expenses of the meeting of the International Union for the Protection of Industrial Property, presumably to be held in May, 1910. Communication with the direction of the International Bureau at Berne, however, disclosed the fact that the period intervening between the date of such communication and May, 1910, was much too short for the required notices to the various governments, the preparation of programmes for the convention, &c., and it was suggested by the director that the earliest possible time in which such convention could be held would be October, 1910. However, it was recommended by him that the meeting of this convention be deferred until May, 1911.

The meeting of this convention is most important to the interests of American inventors and manufacturers. The 21 nations which are adherents to this union will be repre-

sented by delegates having full power to negotiate agreements in respect to the reciprocal protection of patents, designs, trademarks and industrial models, which, when ratified by their respective governments, will have the force of treaties.

It is expected that at this coming convention a strong effort will be made to harmonize the laws relating to patents and trademarks throughout all countries in such a manner that adequate protection will be given to an inventor, no matter of what country he may be a citizen, without the necessity of obtaining expensive patents in each of the several countries in which his invention may be used or sold. It is also proposed to perfect and extend the international registration of trademarks and thus further the reciprocal protection of commercial industries.

To Expedite Allowances.

Manufacturers, trademark owners and inventors have an important stake in the movement urged by the commissioner to expedite the allowance of patents, trademarks, &c., by eliminating certain appeals now permitted by law. Under the present statute an appeal lies from a primary examiner to the Board of Examiners-in-Chief, thence to the commissioner, and from his decision to the Court of Appeals of the District of Columbia, there being three appeals in each case. Concerning the desirability of the passage of an act of Congress shortening this routine by striking out one of the appeals, the commissioner says:

The purpose of the proposed amendment to the statute is to shorten the course of prosecution by the elimination of one of the appeals within the office. This is designed to be accomplished by combining the commissioner, first assistant commissioner, assistant commissioner and examiners-in-chief into a single appellate tribunal, any three of whom shall constitute a quorum, to which all appeals shall lie, whether from a primary examiner or from the examiner of interferences, and from which appeal would lie to the Court of Appeals of the District of Columbia.

The commissioner makes an urgent appeal for a new building properly equipped to transact the important business which now annually comes before the Patent Office, and which has already produced a surplus revenue of more than \$7,000,000, a fraction of which would provide new and commodious quarters for this important bureau.

W. L. C.

Pennsylvania Industrial Activity.

The activity in the iron, steel and metal trades is reflected in the application of numerous companies for charters to the State authorities of Pennsylvania at Harrisburg. An average of 50 a week has been maintained for the last two months, and in the increased number iron and steel concerns figure prominently. Among those applying for charters are the following:

L. A. Green Company, Pittsburgh, to deal in scrap iron, steel, etc.; Louis A. Green, Nathan A. Green and Charles A. Alcorn.

Wilkes-Barre Metal Drawing & Stamping Company, Wilkes-Barre; S. W. Root, C. B. D. Wood, George S. Welsh and F. M. Kirby.

Iron City Bronze Company, Pittsburgh; J. E. and A. R. Bassett and M. R. Guy.

Aluminum Ore Company, Pittsburgh, reduction of alumina and other minerals, and mining and quarrying of clay; Ralph Longenecker, Alexander Black and Allen T. C. Gordon. The same persons have signed applications for charters for the American Bauxite Company, and the Electric Carbon Company, Pittsburgh.

The Pittsburgh Steel Specialties Company, Pittsburgh; J. A. Lager, A. T. Smith, R. T. Rossell, J. C. Swearer and J. C. Butler.

Recent increases of stock or debt certified to the authorities at Harrisburg, include the following:

Fawcus Machine Company, Pittsburgh; stock increased from \$50,000 to \$200,000.

Cyclops Foundry Company, Pittsburgh; stock increased from \$5000 to \$100,000.

McGraw-Burgess Verticle Fabric Tire Company, Pittsburgh; bonds, \$100,000.

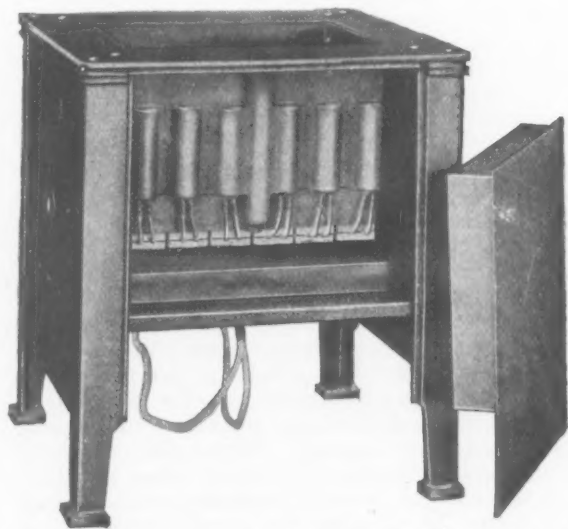
Morse Iron Company, Erie; bonds, \$125,000.

Chadwick Engineering Company, Pottstown, Pa.; stock increased from \$440,000 to \$500,000.

A. G. E. Electrically Heated Oil Tempering Bath.

The oil tempering baths used for tempering steel tools or dies are commonly heated by gas. Arguing that the very close regulation of temperature essential for a uniform quality of product is difficult to obtain with gas heating and that the risk of fire due to the excessive heat possible when gas is used is another disadvantage, the General Electric Company, Schenectady, N. Y., is offering as a substitute an electrically heated oil bath. The general appearance of this device is shown in the illustration.

The bath proper consists of a cast iron tank, or pot, having 12 lugs evenly spaced around the sides. These lugs are drilled to receive standard cartridge units, and it is found by thus distributing the units that an even temperature can be maintained in all parts of the oil. Around the pot is placed a heat retaining jacket consisting of an inner and outer wall of sheet metal, with a space of 3 in. between filled with mineral wool. The



An Electrically Heated Oil Tempering Bath Made by the General Electric Company, Schenectady, N. Y., Showing the Side Removed to Expose the Renewable Cartridge Units.

jacketing on each side of the pot is easily removable, thus allowing quick access to the internal connections of the units. Around the top of the pot there is a wide flange, to which are secured four cast iron legs. A drain pipe controlled by a globe valve provides a means for drawing off the oil. There is a protected recess in one end of the pot in which a thermometer can be placed to indicate the temperature of the oil.

There are two ways of using the oil bath. In the first the temperature of the oil is raised to about 250 degrees F., the work placed in the bath and full heat turned on. When the oil reaches the desired temperature the work is removed and the current turned off. This method requires a single heat bath. The second way is to turn on full heat, bring the oil to the desired temperature, then introduce the work, and by means of regulating switches maintain that temperature constant any length of time desired.

Where desired, a cast iron basket or tray is supplied in which the work can be placed. The basket has eye bolts at each end to facilitate handling. The bottom of the basket is perforated with $\frac{3}{8}$ -in. holes, permitting free circulation of the oil. There are also legs on the bottom of the basket which keep the work an inch or more above the bottom of the bath.

The heating units are connected in groups according to the size of the bath, and the leads are brought out to the thermal block. In the single heat devices each group is protected by a fuse. In the multiple heat device the leads are carried to the switchboard, the latter being so arranged that the energy input can be varied in small steps from zero to maximum. A switchboard is not necessary for the single heat bath, but is required where a multiple heat device is wanted. Any desired temperature

is obtained by throwing in the necessary number of units to give the approximate value. Close regulation is then secured by varying the voltage impressed on one of the units. This is accomplished by means of the rheostat mounted on the board. As a result of this method there is a negligible loss of energy in the regulating device.

The inside dimensions, weight, oil capacity and energy consumption of the three sizes in which the bath is made are as follows:

No.	Length. Inches.	Width. Inches.	Depth. Inches.	Weight. Pounds.	Oil. Gallons.	Kilo- watts.
1	22	12	8	420	9	6
2	18	12	12	475	11	7.2
3	30	16	18	900	37	20

The energy consumption above given is sufficient to heat the oil to a temperature of 450 degrees F. in less than one hour, starting cold.

The Railway Business Association.

The following announcement is made over the signatures of President George A. Post and Secretary Frank W. Noxon:

The Railway Business Association will hold its annual meeting at the Waldorf-Astoria Hotel, New York, November 10. This will be a very important occasion, which it is proposed to conclude with a notable dinner, having among the guests eminent leaders in the railroad, manufacturing, commercial and political worlds.

If the association is to be made a permanent economic force, which many of those deeply interested in railroad and allied interests have vigorously declared should be done, then there is need of a large representation of its membership and a full and careful consideration of the best means for enlarging its usefulness. The more people who are actively interested in its work, the greater will be its influence, and it is most desirable that if, in the opinion of any of its members, its plan and scope should be broadened or its methods changed, the annual meeting be made the place for consideration of all such matters, to the end that enthusiasm may prevail and all may feel that they are important factors in the movement.

The dinner, it is now assured, will be one of the most distinguished of gatherings, since the members of the association, themselves an influential group of industrial captains, will have as their guests celebrated railroad officials, financiers, men of commerce and publicists. The dinner, moreover, will have a purpose—for the addresses of the national figures who are to speak will be a sort of symposium of assurances to the public that all concerned are earnestly seeking to promote permanent concord between the public and the railroads, and prosperity for both.

So important is this meeting that every member of the association ought to be represented and participate in the proceedings, and every one who has the opportunity to attend the dinner should arrange to do so.

Inventors to Be Assisted.—The McMillan Pump, Power & Mfg. Company proposes to build at Kansas City, Kan., in the Blue Valley District, a free workshop for inventors whose ideas are seen to possess merit. The building will be 75 x 200 ft., two stories, constructed of cement. The second floor of the building will be set aside for those inventors who take advantage of the offer. The idea originated with Milton McMillan, the president of the company, whose early history as an inventor had taught him that many good devices are lost to the world because their inventors are handicapped by lack of the necessary funds to produce them. The McMillan Company itself will produce at this plant a carbonic refrigerating device for the household; an ice cream freezer which will freeze ice cream without ice; a cooling device especially adapted to keep electric motors and automobile engines from heating; a self-regulating trolley for electric cranes; the transmission of electrical power without wires; a vest pocket burglar system; an auto boat that will travel both by land and water. The company has secured eleven acres of land located on a belt railroad.

WORKINGMEN'S COMPENSATION LAWS,*

Relating to Bodily Injuries Received in Industrial Accidents.

BY GEO. M. GILLETTE,†

The subject of employers' liability for accidents is attracting increased attention in this country, as evidenced by the reference to the subject in the messages of both Presidents Roosevelt and Taft and by the legislation which has recently been proposed in many of the States. I am of the opinion that there is no question now before the American people pressing for solution which more vitally affects the welfare of society at large. Industry and transportation in the United States number at least half a million annually as the victims of their accidents.

You, gentlemen, are familiar with the federal statutes and the laws of the various States, for your business is built upon it. Briefly stated, the employer is to-day liable to pay damages to his workmen injured while at work, if the workman can prove that the employer's negligence was the cause of the accident. He may, and often voluntarily does pay something in other cases, but the employer's liability in industrial accidents under the various statutes or common law liability would not compel the employer to respond in damages in probably over one in ten of the accidents which occur.

The present system is based on the theory of fault or negligence. It is proposed to change the whole theory of this structure to one of risk of the industry and to provide for the payment of some compensation to every injured employee, provided the accident is not the result of the injured's wilful act, and, if possible, to make the burden of the payment of such compensation a charge against the cost of production ultimately to be borne by the consumer. Should such a change be made, and what view of the matter should and do employers take?

The Present System Unsatisfactory.

I do not believe an employer can be found who is satisfied with the present system. It is wasteful, uncertain, inhuman, antiquated; it disturbs the relations between employer and employee; it breeds perjury; it does not tend to prevent accident.

It is wasteful, for taking the reports filed by your companies in Massachusetts, Wisconsin, Illinois and New York, the loss ratios or percentages of premiums paid to representatives of the injured average about 33 per cent. of the premium receipts. Taking the figures of the German Accident Insurance for the year 1902 and the Employers' Liability and Industrial Insurance for the United States for the year 1903, as published in the Year Book for 1904, we find that the percentage of the compensation paid to the total premium receipts in the United States was 31.6 per cent., while in Germany, under the operations of its Compensation act, 78.5 per cent. of the total receipts was paid out in compensation to employees. I appreciate the fact that the United States statistics may be inaccurate, but they are the best obtainable, and if they are misleading I will ask that your association publish authoritative, definite and accurate figures as to American loss ratio. It has been lately charged in an article in *Harper's Magazine* that the cost of administering the German act is larger than set forth in the published reports. I am not vouching for the accuracy of any of the figures used, but am only using them as the best statistics obtainable. We believe it would be a fair assumption that 40 per cent. of the amount which you paid to the injured or their representatives was taken as toll in litigation and attorneys' fees, and, if this were true, not to exceed 20 or 25 per cent. of the amount which the

employers are paying to the insurance companies for indemnity ultimately finds its way to those injured in industrial accidents. I am not making the charge that the insurance companies are making excessive profits out of this business, for I do not believe they are. The necessary costs of soliciting business, administration and litigation leave only a fair profit to the underwriter, but I submit to you that a system is wrong under the operation of which, if the statistics quoted are accurate and my deductions be true, not over 20 or 25 per cent. of the contributions of the employer finds its way to the relief of the injured employee. It is a waste which would not be tolerated in any other line of modern industrial or commercial enterprise.

The present system is unsatisfactory to the employer because it disturbs the relations between the employer and employee. Litigation over personal injuries, the demands stimulated by the occasional excessive verdict, the continued intervention of the ambulance chaser, are all inimical to industrial peace, and yet the ambulance chaser is a necessary adjunct to the present system.

The present system breeds perjury. The temptation is too great, both on the part of the employer and employee, to so color the facts as to bring them within or without the rules of negligence.

The present system has many features which both to the employer and employee seem unjust. The employer is placed in the position of seeming malice toward the employee; he is charged with fault, with carelessness, and by implication with absolute disregard for the welfare or safety of the employee. On the other hand, the employee cannot understand the justice of the law which does not give to him the same protection which it gives to a stranger, for if under the fellow servant rule a workman on the street wall of a high building were to drop two bricks, one striking a passerby on the street, the other striking a fellow workman inside the building, the stranger passing by can make the employer respond in damages, but the workman inside has no recourse, as the act was that of a fellow workman.

The present system breeds inhumanity. The employer is human, and naturally humane. His sympathy is with the injured. His impulse and desire are to aid him. He has done it time and again, only at the end to find the employee's case in the hands of a speculative lawyer, suit brought for an unreasonable amount, charges made entirely unsupported by the facts, and the friendly relations between the employer and employee forever severed.

An Inheritance from Other Times.

Whence came this present system? It is an inheritance from other times and other conditions. It is a system but slightly modified from that in vogue at the beginning of the Christian era. Under the Roman law the party immediately at fault must respond. In the ancient days labor was the performance of a slave, and the motive for protecting him from injury was the instinct for the preservation of property. In the feudal ages there was little law and little liability. Down to Blackstone's time there existed, so far as we can find, no legal right of recovery, and he mentions none. After the revival of Christianity, and after the Magna Charta had been wrested from King John, there grew into the common law the right to make the employer respond in damages for a wrong which he had directly or indirectly committed. Few laws have ever been passed changing or affecting the common law liability; practically all the law we have is judge-made law, and practically all this judge-made law goes to better the condition of the employee and to hold the employer more rigidly responsible.

In the meantime, while these legal relations and the

* An address on this subject from the employers' standpoint, delivered October 20, 1909, at the Astor Hotel, before the Liability Insurance Association.

† Member of Minnesota Employees' Compensation Commission, president Minnesota Employers' Association and chairman Executive Committee Minneapolis Steel & Machinery Company.

employer's responsibility have largely remained the same, what has the world been doing? The primitive methods of transportation have disappeared. They have been supplanted by the steam and electric railroad, by the steamship, by the airship. Agriculture has been revolutionized. The steam and gasoline plow, the corn shredder, the binder and the thresher have replaced the primitive implements used by our forefathers; but greater than all have been the evolution and the revolution in machinery and the mechanic arts, and to-day the buzz and the whirl of machinery moving with lightning rapidity with cogs and wheels, with belts and pulleys, with whirling saws and keen edged knives, all seem grasping for victims whom they can maim or kill, and all these have within practically a century taken the place of the hand tools which were then mere extensions of the human body.

The dangers lurking about the workmen to-day are a thousandfold greater than were those about the workmen of even a century ago. And, during this century of progress and development, has this system remained unchanged? It has not. Twenty-two foreign countries have adapted their laws to the new conditions, and only in America of all the civilized countries may be found a government of people, civilized, white and free, which has failed to respond to its duty. This leads us to inquire why workingmen's compensation acts have not heretofore been introduced into the United States. I repudiate the claims of the muckrakers. It is not because the American employer is naturally less considerate of his employee; it is not because he takes a malicious pleasure in the bodily injuries which his employees receive. But many other things have contributed to the delay.

The Difficulties in Enacting Legislation.

First are the difficulties met in enacting such legislation as are caused by our dual form of government. Such legislation must be brought about by uniform legislation in the various States. The States are justly jealous of their rights. The federal Government cannot usurp the right of the various States to legislate concerning business which is intrastate. The Federal Congress can only legislate on matters pertaining to commerce which is interstate. There are grave constitutional difficulties which as yet have not been solved; constitutional difficulties in framing an act which shall create an absolute liability on the part of the employer and which shall limit the amount of recovery of the employee and fix an arbitrary method of making such recovery. In no country has a compensation law been enacted creating an absolute liability on the part of the employer without limiting the compensation to be paid employees. Can the employer be made to respond in damages for a wrong which he did not commit? Would it constitute the taking of his property without due process of law? Can a legislature fix the compensation for the injury to an employee, or has the employee a constitutional right to go before a jury of his peers and have the amount of his damages assessed?

Americans have been too busy in the development of their industries and resources until now to give serious thought to this subject, and the workmen, whether American born or adopted sons, have in general found the conditions so much better here than abroad that they have not stopped to think how much better they might be. The history of the movement in Massachusetts and Illinois has shown that, from lack of understanding and of knowledge, neither employers nor employees have understood the question and consequently have failed to give support to measures looking for a betterment of conditions. But the last two years have given great impetus to this reform. Commissions are now considering this subject in the States of New York, Illinois, Wisconsin and Minnesota. The Bureau of Commerce and Labor at Washington is devoting close study to the subject, and a most thorough investigation is being made by Dr. Frankel and Mr. Dawson in behalf of the Sage Foundation. The Federal Congress has already, so far as the Government employees are concerned, taken an aggressive step. The delay is not more chargeable to employers than to em-

ployees. The labor leaders of America have heretofore favored drastic legislation which would rob the employers of their present defenses, while still operating under the existing system, and the employers have felt that the enactment of such legislation would entail upon them unbearable burdens which would ruin their industry, as the additional cost could not be charged to the consumer.

The delay has further been caused by the changed conditions and relations between employer and employee. The labor organizations have contended that the employers should deal with the employees through their representatives, thus destroying the old personal relations which existed, and some labor organizations have contended that the enactment of workingmen's compensation acts would tend to undermine and destroy the stability of their unions, as it would make their members less dependent thereon.

The great present existing difficulty and cause for delay, aside from the finding of a constitutional method of framing a law, lie in the fact that the statistical information in existence is extremely meager by which to determine the resultant cost to the industry of a compensation act based on any given scale of compensation. The statistics of every labor department of every State are incomplete, and, being incomplete, such statistics as have been collected may be seriously misleading. The work done by the labor departments of Wisconsin and New York probably excels those of any other States, but I have examined these statistics carefully, and they are wholly inadequate for use in computing the cost to the employer of a compensation act based on any given scale of compensations. Statistics to be reliable, and to lead to certain conclusions, must contain the figures covering a wide area of territory and a long extent of time. It is right here that this association of employers' liability underwriters may perform a great public service. It is to me a matter of disappointment, and, I confess, some surprise, that, so far as I have been able to ascertain, the tables of experiences of your own companies are so meager. The information either has not been collated, or, if gathered, has not been so tabulated that it would enable you to much more than guess at a pure premium on such a risk. You can serve society and yourselves by arranging these data.

At this point I, however, desire to express not only my own personal appreciation, but the appreciation of the gentlemen constituting the commissions in Minnesota, Wisconsin, Illinois, New York and the gentlemen deputized by the Sage Foundation, for your kind offer to give to those engaged in this study and investigation such information as your records contain.

Benefits and Advantages of a Compensation Act.

What benefits and advantages would accrue from a compensation act? First, in my judgment, it would promote industrial peace; second, it would benefit society; third, it would conserve true economy; fourth, it would decrease pauperism; fifth, it would tend to restore the old relations between the employer and employee; sixth, it would decrease the number of accidents, and, finally, it would increase the sum of human happiness. I assume that these benefits are so self-evident that I shall not stop to argue them.

Let us now consider what kind of a measure it might be advisable to suggest at the beginning of this reform. Let me premise what I have to say under this head by the statement that as I am a member of the Minnesota Employees' Compensation Commission, charged with the duty of investigating this subject and reporting back to the next Legislature such a bill as the commission shall deem fair and just to all interests, the statements or conclusions which I shall here make shall be subject to such revision as a further investigation of the subject and added light shall bring. My mind is still open. I have few conclusions unalterably fixed.

First, shall the act be compulsory or elective? In other words, shall the act seek to create an absolute liability against all employers and bring the employers and employees of all hazardous industries within its provisions, or shall it be permissible, granting to employers and to employees the right to contract within the limits

prescribed by the legislative act? I am of the present opinion that a compensation act should be compulsory. The experience in foreign countries seems to justify this opinion.

Second, shall the act retain the double liability of the English law? It will take much evidence to change my opinion that a compensation act must be restricted to single liability; by that I mean the liability created under the act itself, and that the employees shall not have the right to elect to pursue their common law remedy. The evidence in my judgment goes to show that this is the great weakness of the English law, and I am pleased to say that the members of the Minnesota Commission seem on their present information to be agree upon this fundamental.

Third, what classes of occupation shall it cover? I am much inclined to think that practically all occupations should be covered. Agriculture to-day, with its steam rollers, its corn shredders, its binders, its gasoline engines and farmers' automobiles, experiences in percentage its fair ratio of the accidents which occur. It would seem essential, too, that practically all occupations should be included as a safeguard, both to employers and employees, against further radical legislation either in the radical change of the amount of compensation or in the stability of other rights. The inclusion of agriculture and miscellaneous industrial interests among the undertakings to be affected by such legislation would be a great conservative force with the legislature.

Fourth, what would be a fair scale of compensations? I shall not attempt to answer this now. This is a matter for careful consideration, investigation and for compromise. Pretty well established rules have been laid down, however, in the foreign acts, which in general would limit the compensation in case of death to three times the annual earnings, and in case of disability to from 50 to 60 per cent. of the man's earning power. In my opinion, in the initial acts, sick benefits and old age pensions should be eliminated and very conservative limitations placed on the benefits provided in the act.

Fifth, should the benefits be paid in lump sums or installments? I am strongly of the opinion that the benefits should be paid in installments. The persons receiving these benefits would, generally speaking, not be accustomed to the handling of large sums of money and the amounts paid in compensation, if paid in lump sums, would in many cases soon be dissipated, and the injured then become a public charge. Whether these benefits shall be paid in lump sums or installments must depend upon what provisions are made for the administration of the act and the carrying out of its provisions. If the benefits were paid in installments, careful provision must be made to insure the security of future payments to the injured or his representatives.

The Crux of the Case.

Sixth, should the cost of providing for the compensations named in the act all be borne by the employer, or should it in part be borne by the employee? In my judgment this is the crux of the case. I believe that the employers, not only of Minnesota, but of all other States, are willing to bear as much of the expense as can be charged as a part of the cost of production, and ultimately be recovered in the price charged to the consumer; but the employer in a given State cannot in these days of close margin charge more against the cost of production than is charged by his competitor in an adjoining State. I believe that the employers of Minnesota and the employers of the country are willing to bear as much expense as they are now bearing. The expense is now equalized by employers' liability insurance, the rates for which do not materially differ in the different States. In view of the absence of reliable statistical information as to the resultant cost to the employer of any compensation act, I am of the opinion that it should be agreed between the employer and the employee that the employer should, under a compensation law enacted, say in the State of Minnesota, bear that part of the burden, which he now bears, and that the excess cost, if any, should be borne by the employees themselves.

The arguments in favor of this proposition to my

mind are many. Not only in the interstate competition would it safeguard the interests of the employers, but it would make the employee himself interested in safeguarding the cost, in the prevention of malingering; it would forestall the attempts of labor agitators at every succeeding session of the Legislature from attempting to increase the compensations named in the act, for they would know that the excess cost would have to be borne by the employees themselves. The employees could well afford to do this, because for a very small contribution the 89 per cent. of them who are not now protected would be getting free accident insurance for risks on which they are not now covered. As a theory, no one would attempt to controvert the proposition that all the expense of all accidents caused by all industries should be borne by the industries and ultimately charged to the consumer, but with our dual form of government and the fact that this legislation must be brought about by the legislatures of 48 different States, to my mind, it is primarily essential that in the States first undertaking this change of system every reasonable safeguard be placed about industry, and the State first taking the step should not be penalized therefor.

It is as much for the interest of the employee as for the employer that the industries of Minnesota should be placed upon a fair competing basis with those of other States; otherwise there would be a scarcity of employment, and industry, instead of being encouraged by the legislatures and the State, would be discouraged, and its development retarded. It is right that the employees should contribute to this fund, for the statistics of Germany and of England, as well as those available in this country, conclusively show that a very much greater proportion of accidents are caused by the negligence and fault of the employees themselves than are chargeable to the negligence or fault of the employer. It is right that they should contribute because they would be protected. They would have a protection which was not enjoyed by many a man of no more means and no more income, who was working for himself instead of being employed by another. The German act, to my mind the most comprehensive, scientific and best administered, provides for reasonable contributions by the employees themselves.

An Insurable Proposition.

Seventh, shall the compensation act which is proposed be made an insurable proposition? In my opinion, yes. First, for no compensation act has ever been successful which was not accompanied by an insurance scheme, and, second, because by reason of our commercial and financial system, it would be practically impossible for new industries to be established, or those owned by men of moderate means to be carried on, unless these undertakings could be insured against the liabilities of such an act. An individual or a corporation having a capital of \$50,000 might, to carry on a particular contract, be obliged at times to obtain a credit from his banker of another \$50,000. Could this be obtained if the banker knew that the employer, aside from undertaking the ordinary risks incident to any business, might be engaged in an undertaking where the lives of a number of workmen were at stake and where a single accident might not only wipe out the capital which the employer had, but the money which he had borrowed. To my mind it is essential that by some plan of insurance the risks of any business shall be spread over a general industry, wide territory and a considerable extent of time. Insurance is equally essential to safeguard the interests of the injured employee, to make sure that the compensations named in the act shall be paid to him regardless of the ability of his employer to respond in large sums, and to insure him against the employer's insolvency.

How shall this insurance be carried? In my opinion this is a question which is not for me, but for you, to answer. Permit me to say that in my opinion it will not be carried by employers' liability companies on any plan under which but 20 or 25 per cent. of the premiums are paid out in compensations. Do not misunderstand me. I do not for a moment believe, in fact, I know, that you are not now reaping excessive profits under the present

system, but what I wish to be understood as meaning and saying is this—that when the time comes when compensation acts are enacted in any State, or in most of the States, it means a readjustment of the employers' liability insurance company's business. It means a vast increase in the number of risks, a vast increase in the amount of insurance carried, a vast increase in the number of persons covered. It means multiplying your incomes many fold. It means that if the scheme outlined above should be enacted and these laws made compulsory employers would be looking for you instead of you for them. It means that the cost of soliciting business would be very greatly reduced; it means that the legal expenses and the expenses of adjustment would be greatly diminished; it means, to my mind, that the business would resolve itself into more scientific, safer, surer lines; that the loss averages could be better determined than they now can be; that business could be done on a much smaller margin, and even a greater profit by you than at the present time; but if not, and if the employers' liability insurance companies could not readjust themselves to the new conditions, then, in my judgment, it means that the State itself, exercising directly some of the functions which she now exercises indirectly, must, and would, step in and do some of the work and perform some of the offices which otherwise I would be glad that private enterprise would perform. Do I mean by this State insurance? That is what I mean. I do not advocate it. I am opposed to it except as a last resort.

Why the State Should Be Interested.

I recall the clamor when the Interstate Commerce Commission was established, that it was an unwise and uncalled for interference with private enterprise. Nobody now so regards it, and why should not the State, if necessary, do this? Do not the State and society mix into this matter now? I have scanned the records of our Minnesota courts and I find that one-third of the cases in our courts and more than one-third of the time of our courts are occupied in the trial of these personal injury cases. I go into our hospitals and I find there the victims of industrial accidents who have been cast upon the State and upon society for their care. I go into our almshouses and I find there those who have been incapacitated while contributing their labor to the development of our State. Their earning capacity has been taken from them and they have become public charges, and the State and society are caring for them.

I never have been able to determine how far the police powers of the State or the Government extend, but I do know that, in the minds of our courts and in the minds of the people, these powers are broadening and extending to limits heretofore undreamed of. And I shall not be surprised if there shall ultimately be conceded to the State, in addition to the present right to interfere in private enterprise for the prevention of accident, in addition to the right to care for and provide for the victims of private enterprise and industrial accidents, in addition to the right to provide tribunals where, say, 11 per cent. of the injured go before a jury of their peers and have the measure of their wrongs assessed, there shall be conceded the further right to say to private enterprise and industry, "You must take care of the injuries you cause, "You must contribute a reasonable amount, based on the hazard of your enterprise, to create a fund which the State will administer for the care of those you injure." I hope this will not be necessary; I do not believe it will, but if it shall be found necessary I hope that some one will find the way by which it may be done.

In conclusion, let me ask you in turn, Ought there to be a change in our system? Ought America to stand out alone as the only civilized nation without a compensation act? Ought we to stand idly by when our five great industries alone are causing over one accident a minute without attempting to do something to prevent these accidents, or without making some adequate provision for those who are injured in accidents which are not preventable? Are alms the proper compensation for accident? Should the workman who contributes to the development of our resources and the carrying on of our

industries, and is paid for his labor alone, be entitled to something as a matter of right? Shall we not adapt ourselves to the new conditions and attempt to solve the problem in a way that will be fair to all?

We pension our soldiers, but we forget that Caesar's cohorts are not more destructive of human life than Carnegie's mills, or Hannibal's army than Harriman's railroads. Let employers and employees, and you whose interests lie with both, recognize that the former movements to enact drastic laws increasing the employer's liability and destroying his present defenses without fixing a scale of compensation have been ill-advised and movements along the wrong line. That little of the American legislation in the past 50 years has decreased accidents; that the comparative ratio of the number of accidents in America and in foreign countries is an appalling commentary on American recklessness; that the industrial insurance plans which have been proposed, whether good in themselves or not, have failed because employees would not accept them (and can we really blame them when we know that the experience in all States is substantially like that in Massachusetts, where the companies writing industrial insurance have paid back to the employees in compensation only \$21,000,000 out of \$61,000,000 collected in premiums). Ought we not look for some other plan, and concede that these existing insurance plans are a failure, if for no other cause than that the workingmen will not accept them, and should we not all get together on a safe, sane, reasonable, fair and just proposition, starting in conservatively where such legislation has begun, extending it from State to State, broadening its protection and benefits from time to time, until, when every State shall have passed a workingmen's compensation act, the benefits and compensations can be so adjusted that every industry shall take reasonable care of the victims of its own accidents?

You ask me if the employers would favor a workingmen's compensation act. I do not know the attitude or the sentiment of the employers of other States. As president of the Minnesota Employers' Association I can say that I believe Minnesota employers do favor the enactment of such a law. It, of course, must be safe, sane, have a known and certain cost, free them in a large degree from litigation, not impose greater burdens upon them than are imposed upon the employers of other States, and must do away with a large degree of the waste of the present system. It must be a good start toward an ultimately more perfect law. I have addressed a letter of inquiry to a large number of employers of Minnesota asking their views. I have received 40 replies; 38 of these favored a compulsory workmen's compensation act; two were opposed to the passage of such a law.

The Empire Iron and Steel Company's Enlargements.—The Empire Iron & Steel Company, Niles, Ohio, has let contracts for additions which will largely increase the capacity of its plant. Two new mills are being installed and additions will be made to the main building and roofing department. With the additions the main building will be 950 ft. long, the roofing department 70 x 800 ft., and the galvanizing department 600 ft. long. The company has purchased a C. & G. Cooper engine and some additional Sterling boiler capacity for its new mills. Other additions are being made, improving the general layout of the mills, these minor additions including a new storehouse, new machine shop and blacksmith shop, and an enlargement of the office room. The plant when finished will consist of nine mills and four galvanizing kettles, together with the forming department.

The State Statistician of Indiana has opened a free employment bureau in connection with his office in the State House at Indianapolis, by which he endeavors to keep in easy communication with those who want work and those who want workers. He received notice last week from the Maxwell-Briscoe Motor Company that it would pay the fare from Indianapolis to Newcastle for 500 men in the various departments of its great plant.

The New Milwaukee Universal Milling Attachment.

For use on the Milwaukee milling machines made by the Kearney & Trecker Company, Milwaukee, Wis., the

to machine on a plain or even a universal milling machine without the attachment. It is not only adapted to handle unusual and occasional jobs, but is equally well suited for every day and ordinary work. Like the vertical spindle and other attachments made by this company it is held in place by being clamped to the knee

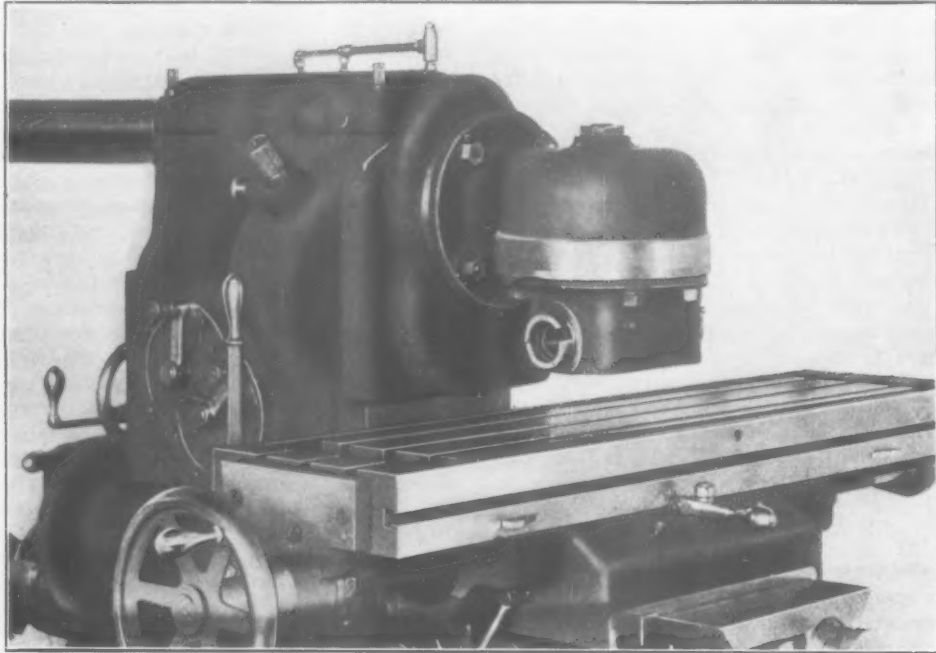


Fig. 1.—The New Milwaukee Universal Milling Attachment Made by the Kearney & Trecker Company, Milwaukee, Wis.

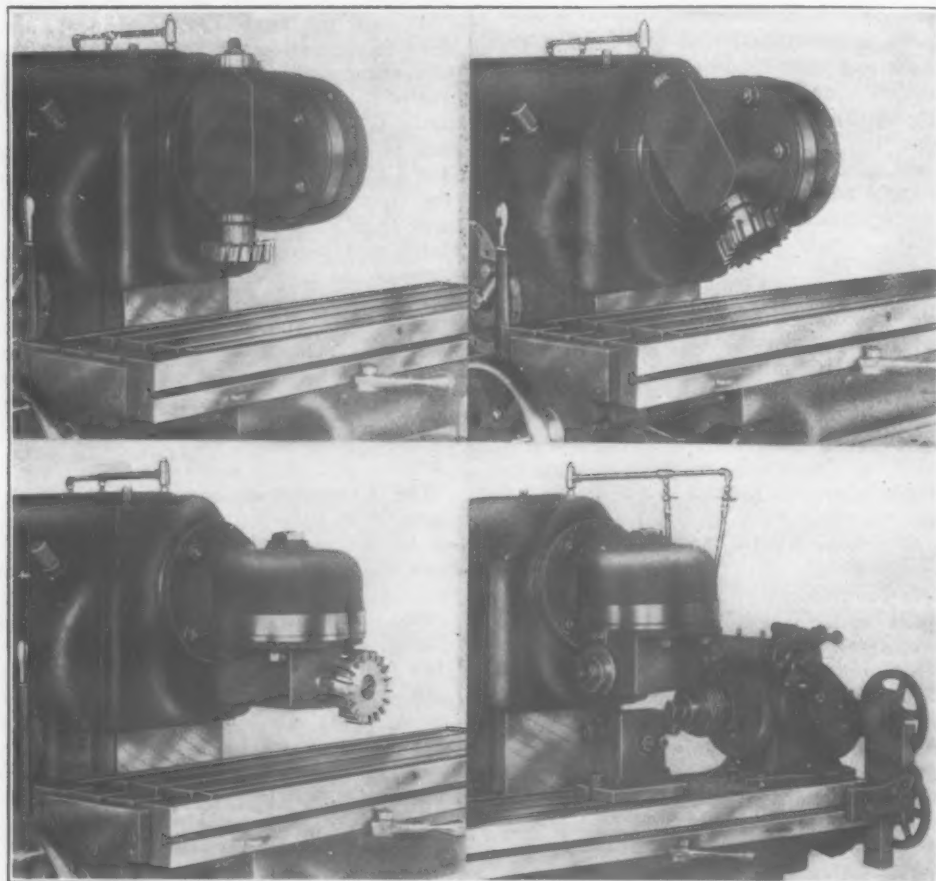


Fig. 2.—Various Settings of the Milwaukee Universal Milling Attachment.

new universal milling attachment has been perfected, shown in Fig. 1 herewith. This attachment may be adjusted to present the cutter to the work at any angle, as may be judged by the four views given in Fig. 2, which show four typical settings of the milling attachment spindle. With all these various adjustments it becomes possible to mill almost any complicated piece of work such as would be very difficult, if not impossible,

slide on the column of the machine and can be changed very quickly.

In Fig. 3 the attachment is shown in section. The casting *a* is clamped to the knee slide of the column of the machine and remains fixed in position. On this base casting the remainder of the attachment has circular adjustment about the axis A A, the casting *b* being secured by bolts engaging in a circular T-slot in the cast-

ing *a*. Similarly secured to the casting *b* is the casting *c*, so that with respect to *b* it has circular adjustment about the axis B B. By combinations of these two adjustments any position of the spindle *c* may be obtained. The drive is from a spur gear *e* secured to the flange end of the main spindle through the spur gear *f*. The shaft carrying the latter is in one piece, with the bevel

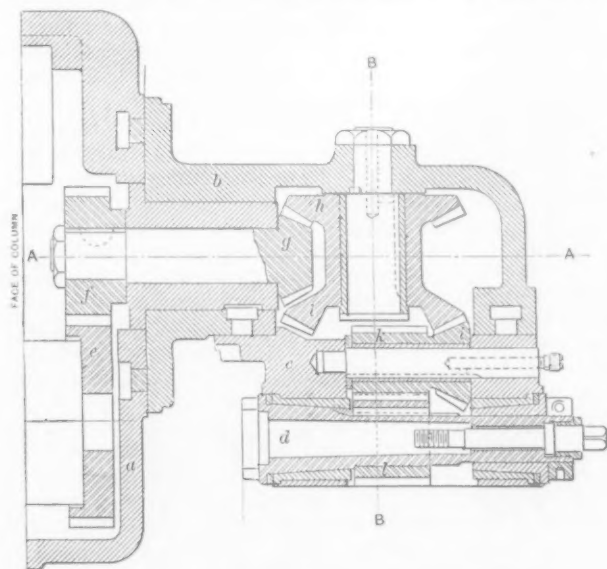


Fig. 3.--Sectional View of the Milwaukee Universal Milling Attachment.

gear *g* driving the bevel gear *h*. The latter is in one piece with the bevel gear *i*, which drives the bevel gear *j* on the quill with the spur gear *k*. The latter is wide faced and drives the attachment spindle through the pinion *l*. It will be seen that the transmission is such that all adjustments of *b* and *c* with respect to each other and with respect to the main base *a* are possible with all the gears remaining in mesh.

The spindle runs in bronze bearings, which are adjustable for wear, and is made of hardened steel ground on the outside and in the taper hole which is a No. 10 Brown & Sharpe taper on all sizes. Clutch drive is provided for arbors and cutters, and also a draw-in and discharge rod. Spirals at any angle can be cut on both the universal and plain machines, if the latter are fitted with the universal spiral dividing centers which the company is prepared to supply. The universal milling attachment can be used as an ordinary vertical attachment, and is recommended for face milling with cutters up to 6 in. in diameter. It can also be used for cutting racks. Three sizes are made adapted for use on the three different sizes of plain and universal milling machines made by the company.

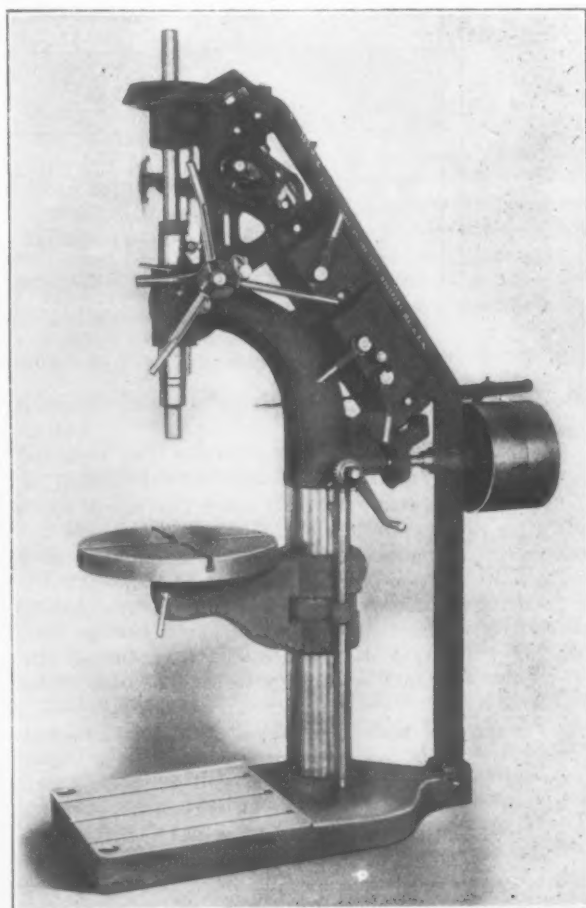
The New Robertson Factory.—The Robertson Drill & Tool Company is now located in its new factory on the corner of Grant and Letchworth streets, Buffalo, N. Y. On this site is erected a shop of modern design, consisting of two stories with basement of cement construction and superstructure of brick, the dimensions being 50 x 150 ft. The basement is used for storage and a heating plant, and the first floor is equipped with machinery for the manufacture of the company's Modern drill presses and Royal power saws. The top floor is used for pattern making. The office is located in the east end of the factory, while the foundry is adjacent to the north and about 50 ft. distant. The machine shop is operated with a 30 hp. electric motor, and the tools are all of modern design. The foundry is equipped with all the latest appliances including an electric crane. An output of 25 drills per day is expected. W. F. Semon is president and treasurer; W. Robertson, vice-president; J. W. Murphy, secretary.

By a decree of court A. B. Brock, receiver of the Beaumont Iron Works, Texas, has been authorized to advertise the sale of this property for an upset price of \$90,000 on December 7.

A Barnes 24-In. All-Geared Drill.

A new 24-in. all geared drill, similar in construction to the all geared 20-in. drill described in *The Iron Age* April 30, 1908, has been brought out by the Barnes Drill Company, Rockford, Ill. This tool, while embodying all of the features of the smaller size, is very much stronger and more powerful, being capable, it is claimed, of handling as heavy work as is usually done on an ordinary 28-in. cone belt driven drill. As an example of its power, it is stated that a 2 9-32 in. carbon steel drill has been driven through 2-in. cast iron on the first back geared speed of 64 rev. per min. in 1 min., equivalent to a feed of 1-32 in. per revolution. Holes 1 29-32 in. have also been drilled with a carbon drill through 1 in. steel without back gears at a speed of 100 rev. per min. in 55 sec., or a feed of 0.011 in. per revolution. Using high speed drills running at 258 rev. per min., without back gears, steel 1 1/2 in. thick has been drilled through in 23 sec., which is at a feed of 0.015 in. per revolution.

The machine has eight geared changes and 20 variations of positive power feeds, ranging from 0.0015 to



The New 24-In. All-Geared Upright Drill Built by the Barnes Drill Company, Rockford, Ill.

0.031 in. per revolution. As in the 20-in. drill of the same type, all changes of feeds and speeds (including the back gears) can be made instantly by the operator from his position in front of the drill and without stopping the machine. Time saving and greater output, not to speak of the heavier work it will properly do, are the principal features sought and accomplished in the design and construction of this machine.

The drill is empowered to drive a 2-in. high speed drill in steel at its maximum efficiency. It is regularly furnished with back gears and positive power feeds complete, but when desired back gears may be omitted or the drill may be supplied with a plain star wheel lever with or without back gears. As ordinarily constructed the machine is fitted with a table having elongated holes or slots, but when so ordered a special table with T slots at right angles is substituted, as in the illustration. When an oil pump attachment is wanted a square table with oil channel is supplied.

Determining Sulphur in Steel.

A New Form of Apparatus.

BY C. GORDON MILLS.

The most widely used form of apparatus for making sulphur determinations consists of the usual 12-oz. sulphur flask fitted with a two-hole stopper, into which is fitted a thistle funnel, or stop-cock funnel, and an ordinary piece of tubing bent to the requisite shape and connected up with a small condensing bottle. The latter part may be replaced by having the outlet tube in the form of a large vertical pipette tube, which, offering a large surface to the cooling influence of the atmosphere, tends to condense the steam, &c. In either case the gases

length will depend upon the number of sets of separate apparatus to be used. Although six is proposed as a convenient number, more could be employed if desirable. The vessel may be constructed of any suitable metal, but galvanized iron is recommended both for economy and its ability to resist acids. This tank is supported on a metal stand similar to that shown at *b*. To this a shelf, *c*, is attached, to support the absorbent cylinders *d*, which are protected from the heat of the bunsen burners by the metal shield or screen *e*. Drilled at equal distances along the center of the bottom of *a* is a series of holes, *f*, allowing sufficient clearance between each to accommodate the flasks *g*. Such holes are large enough to receive a two-hole rubber stopper, *j*, into which is fitted the thistle funnel *k* and the condenser *l*, taking care to make the joints perfectly water tight. The thistle funnel *k* is of the ordinary type, but sufficiently long to

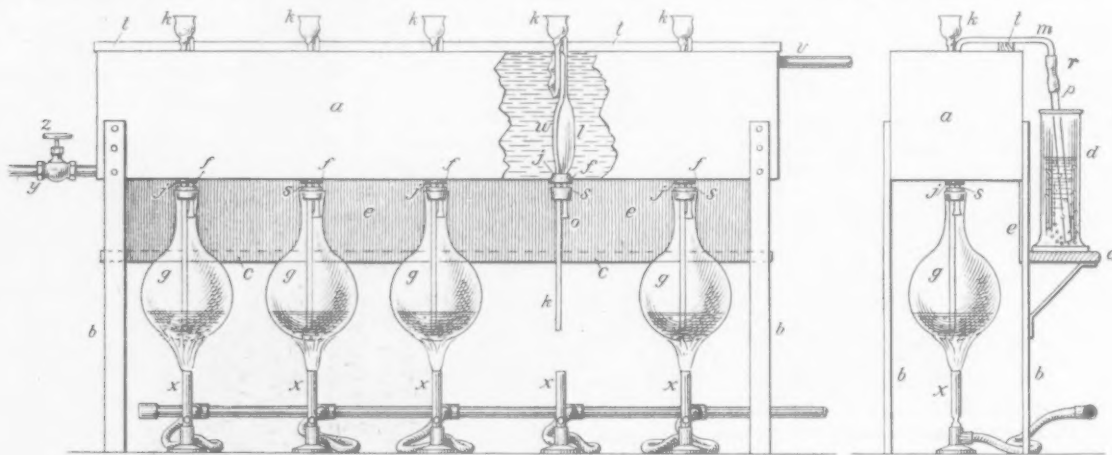


Fig. 1.—Side and End Elevations of an Improved Apparatus for Making Sulphur Determinations.

are then led into the usual absorbent solution contained in a suitable glass vessel.

The chief disadvantages of the former type, with the condenser bottle, is that it is extremely awkward to handle. It is necessary to take apart the whole apparatus after each determination for cleaning purposes, besides which the condensed liquid collected will invariably contain a little dissolved sulphuretted hydrogen (H_2S), thus tending to produce low results unless corrected or allowed for. Again, the determination must be conducted very slowly and carefully watched to avoid the introduction of steam into the absorbent solution along with the H_2S .

The latter type, which for convenience may be termed the "pipette type," while being an improvement upon the former apparatus described, is far from being ideal, for, unless the pipette condenser be very large, there is always chance of steam and chlorides passing over into the absorbent solution. Therefore, for safety and accurate results, the process must be conducted slowly and carefully watched, when with standard conditions and expert manipulation this type of apparatus may be considered ideal for its purposes. In the modern steel works laboratory, however, where bustle usually prevails and unskilled operators are common, such conditions are rarely obtained, and what is needed, indeed, is absolutely necessary, for accurate and rapid work, is some type of apparatus which is more or less foolproof and speedy. More especially is such a type of apparatus necessary when it is considered that the sulphur must be evolved from a sample as rapidly as possible to give the best results. It was a realization of the conditions outlined above that prompted the author to devise the simple modifications described below.

The Apparatus.

The whole outfit may be very readily constructed and, apart from the metal parts, may be easily fixed up in the laboratory, or may be ordered from any dealer in laboratory apparatus. Fig. 1 shows a longitudinal and side view of the complete apparatus.

A suitably sized rectangular tank or vessel, *a*, is constructed of the shape shown, with its top open. Its

extend nearly to the bottom of the flask *g*, when in position, and is slightly bent at *w*, to accommodate the condenser *l*, Figs. 1 and 2.

The condenser *l* may be blown from a piece of thick walled tubing, or an ordinary large sized pipette may be employed. The end at *o* is dilated somewhat after the rubber stoppers *j* and *s* have been fitted on to prevent the constant dripping of the condensed liquid from interfering with the flow of evolving gases. The end at *m* is bent at right angles to form the U as shown in Fig. 2, and a piece of rubber tubing is fixed upon the end at *r* to connect, when required, with the glass tubing *p*, extending to the bottom of the glass cylinder *d*. The U bend at *m* may be supported by a strip of metal or wood, *t*, as shown in Fig. 1. The stoppers *s* are of such size as to fit the flasks *g* perfectly and tightly. The tank *a* is filled with water by the pipe *y*, controlled with a small regulating cock, *z*; *v* is the overflow pipe for the heated water.

Making a Determination.

With the apparatus filled up and ready for operation a sulphur determination is conducted in the following manner:

The weighed sample is transferred to a clean flask, *g*, which is carried to the apparatus and fitted upon the stopper *s* by simply raising the neck of the flask under the funnel stem at *k* and firmly, but gently, making the connection tight. The cylinder *d* has been previously partly filled with the absorbent solution used and the glass tube *p* fixed tightly into *r*. All is now ready for dissolving, which is effected by introducing a sufficient quantity of HCl (1:1) into the flask *g* through the thistle funnel *k*. The bunsen burner *x* is lighted and placed under the flask, whereupon the operation may be left to look after itself until all the sample has dissolved

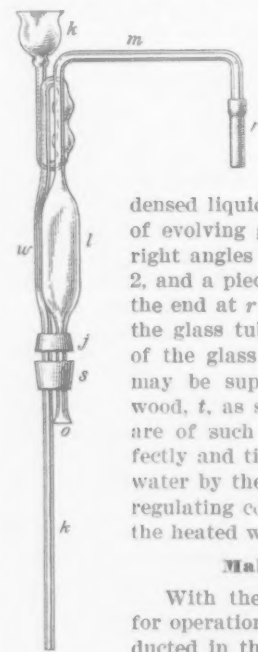


Fig. 2

and the bubbles of gas cease to be evolved from the glass tube *p*. The operation being finished, the light *x* is removed or extinguished, *p* disconnected from *r*, and the cylinder *d* and contents removed for titration, while the flask *g* is removed and washed, making the apparatus ready for another determination.

If the apparatus is being constantly used, as in a large laboratory, a constant stream of cold water must be maintained in it, but if only used intermittently this would not be necessary.

The author does not claim any novelty or originality for the apparatus described, for, although he has not seen, heard nor read of anything similar being suggested or used, it appears to be so very simple that it would not be at all surprising to hear that a similar one has been devised.

After over 12 months' practical experience with this apparatus the author cannot too strongly recommend it as a vast improvement over the older forms of apparatus, and, indeed, would consider it a hardship to go back to them. It not only cuts down the time to about one-half, but one can always be assured of obtaining standard conditions by its use, a very important consideration in volumetric sulphur determinations.

It may be added that this type of apparatus is invaluable for quick test work, where it is necessary to make sulphur determinations for open hearth work. If hot hydrochloric acid be used a determination may be made in from 2 to 5 min., varying with the grade of steel operated upon, with no danger of any steam or chlorides entering the absorbent.

A Youngstown Electric Industrial Locomotive.

An industrial locomotive to run on narrow gauge track and around radius curves, should be simple in design, of rugged construction, and should have a flexible wheelbase. To meet these requirements, the Youngstown Car Mfg. Company, of Youngstown, Ohio, designed and built the 3-ton narrow gauge electric locomotive shown. The gauge is 19½ in. from inside to inside of the rails, and the car operates easily around 12-ft. radius curves.

The locomotive is six-wheeled. The rigid axle is the driving axle, while the double truck is the pilot, and affords flexibility of wheelbase in conjunction with an

adjustable feature in the driving axle. The motive power is a 10 hp. direct current General Electric series motor with a reduction of 8 to 1 from the armature shaft to the driving axle. The gears are cast steel throughout. The axle being driven by a silent running rocker chain from the motor countershaft. The speed of the car varies from about 5 miles per hour on the level, with load, to 3½ miles on steep grades.

The wheels are all ground insuring good traction. The driving wheels are 16 in. in diameter while 8-in. wheels are used on the four-wheeled truck. The controller is of the rheostatic magnetic blow-out type, with five speeds forward and the same number on the reverse. The rheostats are of the grid type as used in railway service, and are ample for the heavy currents used in switching service. The electrical apparatus is protected by a magnetic blow-out circuit breaker against dangerous rushes of current. A powerful hand brake is provided. Normally this particular locomotive operates on practically level tracks, but there is a long 2½ per cent. grade in one part of the plant where a separate locomotive is used constantly. In order that the locomotives should be interchangeable and take care of this work in case of emergency where greater weight on the driving wheels is required, a space was provided for ballast so that the traction can be increased to take care of the load on the grade. This arrangement is advisable as the locomotive thus operates at the greatest efficiency under any conditions of grade, and no surplus weight is hauled about when not required.

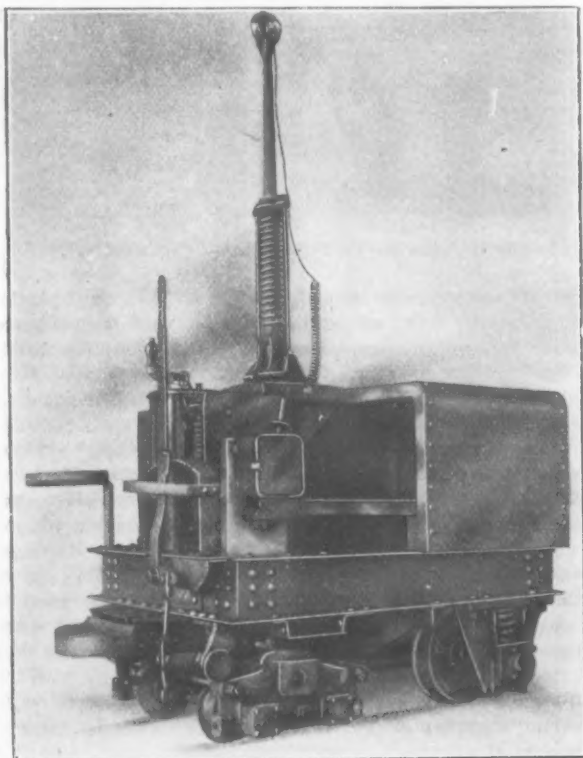
Electric haulage in industrial plants is being quite largely substituted where horses, mules, and even steam locomotives have been used. Reliability, flexibility, low cost of operation and maintenance, and increased output are the advantages claimed for an electric haulage system.

The School-Shop Apprentice Plan in Chicago.

Three important Chicago manufacturing companies are participating in an industrial education movement which is on the lines now being followed in a number of cities. It contemplates a division of time between the shop and the school by pupils who have gone beyond the grammar grades in the public schools. A similar system as carried out at Fitchburg, Mass., in the past year was described in a paper by M. A. Coolidge read before the National Machine Tool Builders' Association meeting in New York October 12 and published in *The Iron Age* of October 14.

The Chicago concerns taking part in a similar movement are the McCormick Harvesting Machine Company, the Chicago works of the National Malleable Castings Company and the W. W. Kimball Organ Company. These three companies have agreed to give half-time employment to such boys as will take instruction in mechanical or other technical lines the other half time. It has been stated in one published account of the plan that the three companies agreed to pay the boys at practically the same rate for school time as for shop time. This is a mistake. Payment is made only for the time spent in the shop. The experiment at Chicago is to be carried out at Farragut High School, located in the heart of the West Side manufacturing district. The course of study to be followed is now being worked out by the school authorities and will include mechanical drawing, English and other work adapted to the needs of boys in the particular trades represented. The aim will be to have the work in school timed to the advancement of the pupils in their shop work and supplementing the latter.

The United States Geological Survey reports that only one lot of ore whose value was chiefly confined to its content of antimony was mined and marketed in the United States in 1908—a lot mined near Mill City, Nev. Most of the antimony sold in this country is contained in antimonial lead, from which the lead is not separated in its common uses.



A 3-Ton Electric Industrial Locomotive for Narrow Gauge Track with Sharp Curves, Built by the Youngstown Car Mfg. Company, Youngstown, Ohio.

Water Heating and Softening.

Apparatus of the Harrison Safety Boiler Works.

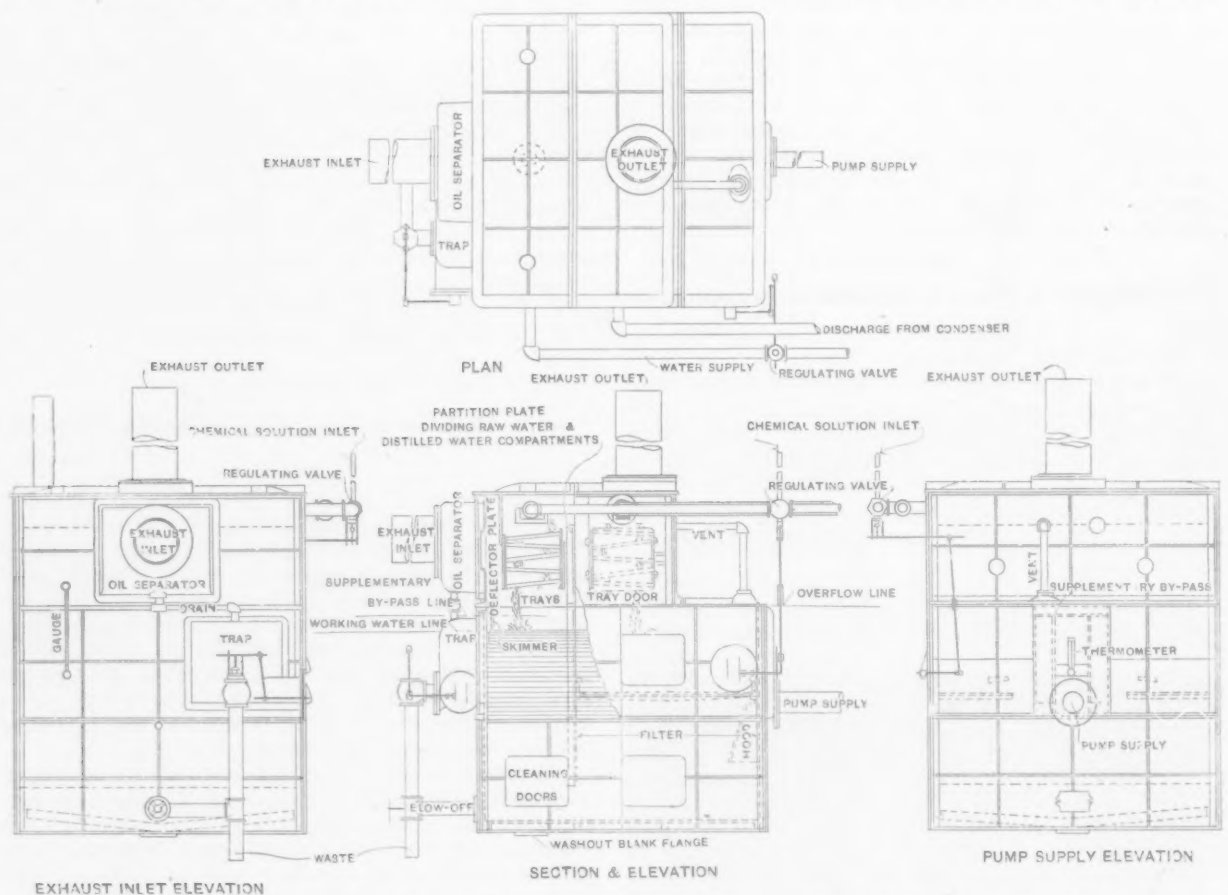
Where exhaust steam is used for heating and drying it has become quite universal to use the returns as boiler feed. An early objection to this on account of presence of cylinder oil from the engine in the condensed returns, with the present efficient oil separators has been eliminated, and many large plants are run on this system winter after winter without evidence of oil in the boilers, although the returns are used over and over, and constitute 70 or 80 per cent. of the whole boiler feed. Condensed returns make ideal boiler feed, since they are distilled water, which cannot deposit scale or corrode boilers, provided impurities are not introduced through other sources.

However, a certain amount of raw water must be added to make up that which is lost by leakage, by

water, and more particularly the presence of oxygen—that is, of air. Aeration of boiler feed water may take place in several ways. One of the most common is through the use of outside packed plunger pumps, which often draw in and mix with the water quite a volume of air.

Heating the water drives off occluded gases, and where the water is heated by spraying through a steam bath the escape of gas is greatly facilitated, since the depth of the water particles is small and since, according to Dalton's law, an atmosphere of steam offers the same opportunity for the expansion of the gases as would a vacuum. The breaking up of the bicarbonate of lime by heat also sets free carbon dioxide, the remaining normal carbonate being precipitated as sludge. For this reason open feed water heaters are often spoken of as purifiers, but they do not purify all waters, since many contain other solids in solution, the most common being sulphates of lime and magnesia.

Fortunately it is possible to transform the sulphates and also the nitrates, chlorides and acids by a single and



A Combined Feed Water Heating and Softening Apparatus Built by the Harrison Safety Boiler Works, Philadelphia, Pa.

escape of steam through back pressure valves and in various other ways. This raw water contains more or less scale forming matter and it is found that scale slowly deposited from a small percentage of make-up water is much harder, and because of this and the fact that it is often overlooked, more dangerous to boilers than the more porous and rapidly formed scale deposited if the boiler supply is made up entirely of raw water. At the same time the installation of a complicated purifying system to treat this comparatively small amount of water would hardly be justified, especially as it requires as much expert chemical knowledge to treat a small volume of water as a large one.

Another way in which condensed returns may become objectionable as boiler feed is through the admixture of air and gases. Many engineers believe that too pure boiler feed water will cause corrosion. This is a fallacy, as shown by repeated and thorough investigations by chemists, both in this country and in Germany, who have demonstrated that chemically pure water is entirely inert and that corrosion is always conditional upon the presence of dissolved gases and salts in the

inexpensive reagent—namely, soda ash—and the reaction of soda ash with sulphates or other salts takes place more rapidly and completely in hot water than cold. Conversely, it has been found that the presence of soda ash in solution encourages the precipitation of carbonate by heat.

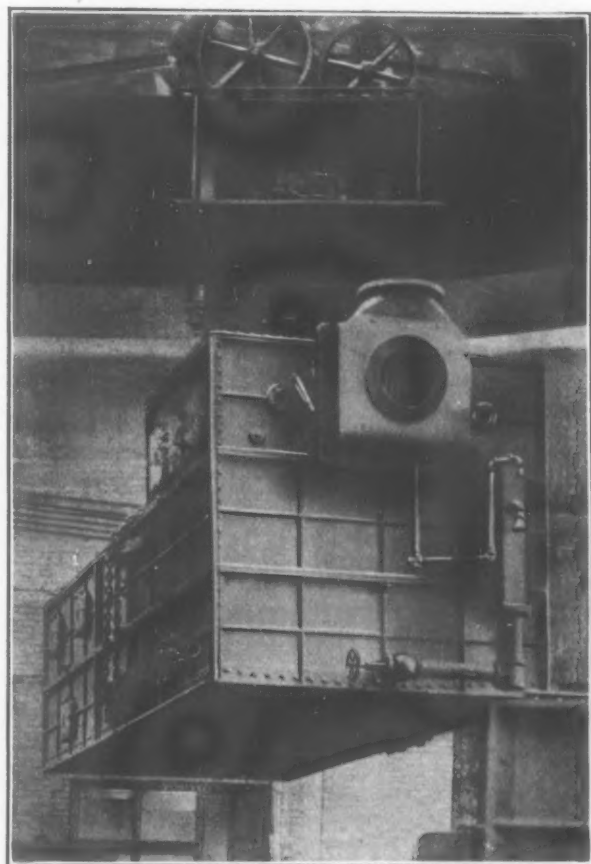
The apparatus illustrated, built by the Harrison Safety Boiler Works, North Philadelphia station, Philadelphia, Pa., has been especially designed for use in connection with exhaust steam heating and drying plants, where the make-up water requires softening. It is so arranged that the reagent is fed continuously in proportion to the inflow of make-up water, and provision is made for removing the resulting precipitate from the water by sedimentation and filtration. A special feature is a bypass which comes into play automatically in case the filter should be neglected and allowed to clog, thus insuring a supply of hot softened water to the boiler feed pumps at all times.

This apparatus also has attached to it the new surplus exhaust separator which this company has lately applied to its Cochrane heaters, and which was described

in *The Iron Age* June 10, 1909. Where operated in accordance with instructions the apparatus is guaranteed to prevent hard scale forming in the boilers, or any other deposit which cannot be washed out with a hose, and to entirely protect the boilers from corrosion. It is also guaranteed that water heated by exhaust steam that has been passed through the oil separator attached to the apparatus, or water condensed from the steam itself, will be entirely suitable for boiler feeding and other purposes.

In the apparatus here shown the returns and treated raw water are mingled together in the sedimentation chamber and the whole volume is passed through the filter, but where the percentage of returns is large it may be advisable to give over the entire sedimentation and filtering capacity to the make-up water alone, and to pass the pure condensed returns, after reheating, directly to the pump supply chamber. This gives better results than if the two water supplies are mingled before treatment.

This apparatus is equally applicable in surface con-



Exterior View of the Feed Water Heater and Softener.

densing steam power plants where the condensate is utilized as boiler feed, in which case there is the large volume of condensate to be heated and a comparatively small volume of supplementary make-up water to be heated and softened. The apparatus can then be so arranged that the exhaust steam will first come in contact with the make-up water, insuring full temperature for the chemical reaction, before heating the vacuum pump discharge. As will be apparent, this apparatus saves a large part of the cost of separate feed water heater and water purifying system and makes it possible to purify the small amount of raw water at a nominal cost. The driving off of air and gases from the feed water reduces to a certain extent the amount of gases to be dealt with by the vacuum pump, while the elimination of scale forming matter from the water should obviate the gathering of scale upon and erosion of turbine blades.

In a speech at Corpus Christi, Texas, October 22, President Taft said: "I am not in favor of drastic legislation against railroads except such as is necessary to

keep them within the law and keep rates reasonable. We want to encourage our railroads. The only good policy, as well as the only honest policy, is a square deal to the railroads, so as to give them the rates they ought to have, and not allow popular prejudices to deprive them of reasonable profit on the investment, including the risk when they went into the business."

The Duty on Metal Containers.

No feature of the new tariff act has caused collectors of customs more perplexity than the terms of paragraph 195 of the metal schedule providing for the assessment of duty on cans, boxes, packages and other containers composed wholly or in chief value of metal, &c. The Treasury Department has had numerous requests for a detailed interpretation of this paragraph, and the customs division has therefore prepared an analysis of the provision which has been incorporated in a letter to the collector of customs at New York, in part as follows:

I have to advise you that the department construes the first clause of paragraph 195, which reads: "Cans, boxes, packages and other containers of all kinds (except such as are hermetically sealed by soldering or otherwise), composed wholly or in chief value of metal lacquered or printed by any process of lithography whatever, if filled or unfilled, and whether their contents be dutiable or free, 4 cents per pound and 35 per cent. ad valorem," to cover only such containers as are composed wholly or in chief value of metal either lacquered or printed by any process of lithography. The department interprets the term "hermetically sealed by soldering or otherwise" to cover such metal cans, boxes, packages and other containers only as are made impervious to air and fluids by welding, soldering or fusing the parts at the openings, and does not include the sealing by molten wax, paraffin, paste or other similar temporary methods of sealing.

As to the second clause, which reads: "Provided, that none of the foregoing articles shall pay a less rate of duty than 55 per cent. ad valorem, but no cans, boxes, packages or containers of any kind, of the capacity of five pounds or under, subject to duty under this paragraph, shall pay less duty than if the same were imported empty" the department holds that the metal cans, boxes, packages or containers specified in the first clause shall not pay a less rate of duty than 55 per cent. ad valorem, and that cans, boxes, packages or containers of metal of the kind specified in the first clause, when of the capacity of five pounds or under, shall pay duty at the rate of 4 cents per pound and 35 per cent. ad valorem, provided such rate is not less than 55 per cent. ad valorem, and provided further that such rate of 55 per cent. ad valorem is not less than the duty which would be chargeable on such cans, boxes, packages and other containers, if imported empty.

As to the succeeding provision, which reads: "And the dutiable value of the same shall include all packing charges, cartons, wrappings, envelopes and printed matter accompanying them when such cans, boxes, packages or containers are imported wholly or partly filled with merchandise exempt from duty (except liquids and merchandise commercially known as drugs), and which is commonly dealt in at wholesale in the country of original exportation in bulk or in packages exceeding five pounds in capacity," the department holds that where merchandise, which is commonly dealt in at wholesale such as tea in the country of original exportation in bulk or in packages exceeding five pounds in capacity, is imported in metal cans or containers of five pounds or under in capacity the dutiable value of such containers shall include all packing, charges, cartons, wrappings, envelopes and printed matter accompanying them when such cans, boxes, packages or other containers are imported wholly or partly filled with merchandise exempt from duty (except liquids and merchandise commercially known as drugs).

Articles of incorporation have been formed by the Vermillion Iron Development Company, Tower, Minn., for the purpose of developing two iron ore properties on the Vermillion range. The company has secured control of the Kitto-Merrit property, on Pine Island, and the Murray homestead, on the Vermillion range, and proposes to begin operations at once by sinking a regular working shaft to a depth of 500 ft. at least on Pine Island, where it is said there are two veins aggregating 180 ft. in width and extending $\frac{1}{2}$ mile. The officers of the company are: James Cardle, president; Dr. T. F. Rodwell, vice-president; Tilton E. Lewis, secretary and treasurer.

Polishing and Drying by Hot Air.

A Centrifugal Machine for Cleaning Small Metal Articles.

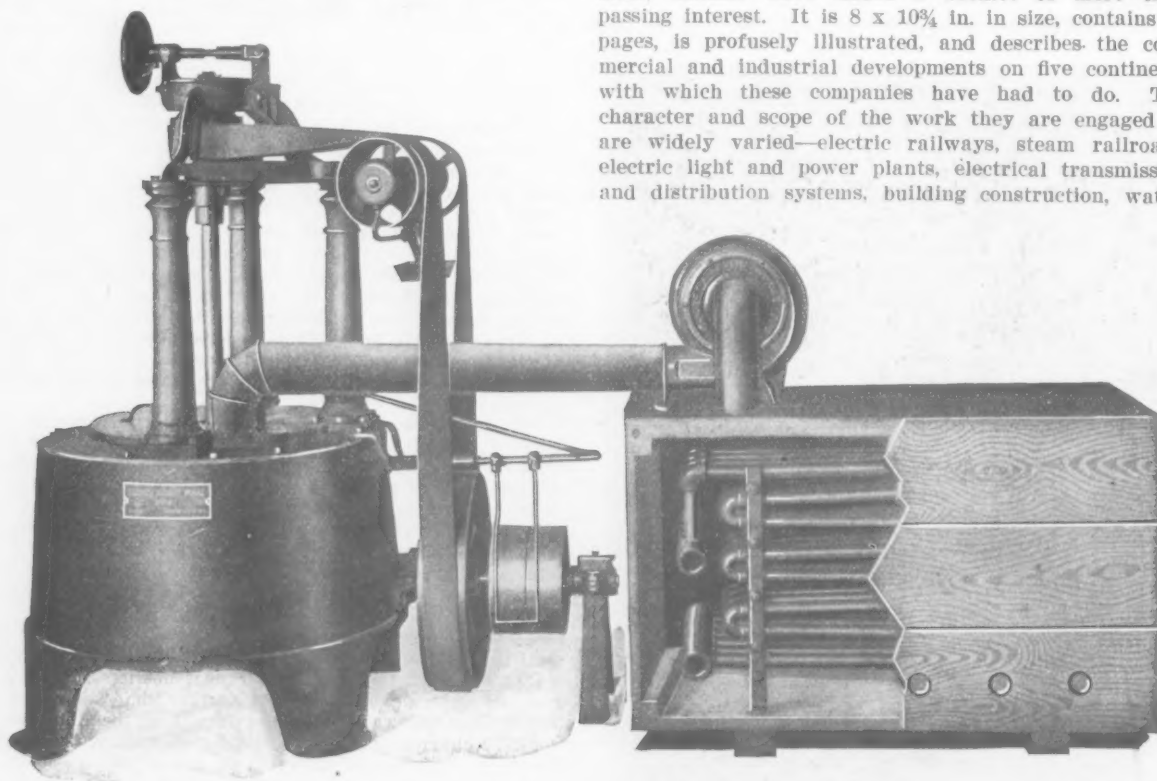
The use of hot air blast for drying out and polishing small metal goods is an interesting development to which prominence has been given by the Tolhurst Machine Works, Troy, N. Y. The machine devised for this work is not intended, it is explained, for polishing iron, steel or brass before nickel plating, as some inquirers concerning it have apparently inferred, but for drying and brightening electroplated articles which are taken directly from the plating vats to the machine. How the hot air produces the brightening or buffing effect hitherto secured by the use of sawdust and the tumbling barrel is not clear. The designers of the machine say that the discovery of the process was rather an accident than

there has been no contact are not polished. The action of the air has been compared with that of the sand blast, except that there is only a polishing and not an abrading action.

The plants in which the Tolhurst centrifugal drier has been in use manufacture eyelets, pins, screws, rivets, hooks and eyes, buttons, clasps and kindred small articles, which are turned out in large quantities.

At Work Around the World.

Under the above well-chosen title the four associated engineering and contracting companies—J. G. White & Co., Inc., 41 Wall street, New York City; J. G. White & Co., Ltd., 9 Cloak Lane, Cannon street, London, E. C.; Waring White Building Company, Ltd., Oceanic House, 1A Cockspur street, London, S. W., and the Canadian White Company, Ltd., Sovereign Bank Building, Montreal, Canada—have issued a booklet of more than passing interest. It is 8 x 10 $\frac{1}{4}$ in. in size, contains 82 pages, is profusely illustrated, and describes the commercial and industrial developments on five continents with which these companies have had to do. The character and scope of the work they are engaged in are widely varied—electric railways, steam railroads, electric light and power plants, electrical transmission and distribution systems, building construction, water-



The Tolhurst Centrifugal Machine for Polishing and Drying Metal Articles.

the working out of any reasoning on the subject, since there was no ground for expecting such results from the action of a hot blast.

The apparatus consists of a self-balancing centrifugal drier, an inclosed steam coil and a blower to force hot air from the coil into the drier. The articles to be polished are placed in the wet condition in the basket of the centrifugal, the speed of which is 700 to 900 rev. per min., according to size. As the machine is started the hot air is turned into the revolving covered basket. Within 10 min. drying is completed, and if the articles have been plated they are given a high polish. The machine is so designed that hot air forced into it has unobstructed circulation through and out of it, passing through the mass of revolved articles with such rapidity that the temperature of the metal is raised from 10 to 25 degrees above that of the heated air. Oil is thrown off of them by centrifugal force in the same manner in which water is removed. In the case of cup-shaped articles the centrifugal motion will not suffice to throw out all the moisture, and here the effectiveness of the hot air blast is evident. It is stated that where articles have been nickel plated the cloudy appearance due to oxidation gives way to a polish not obtained by methods previously used. That the very rapid circulation of hot air is the effective agency is indicated by the fact that unless the articles are so placed in the basket that the air touches all parts, the portions with which

power developments, irrigation works, harbor works, water works, gas-lighting plants and industrial plants. Brief descriptions are given of numerous notable undertakings in various parts of the world which are accompanied by many interesting illustrations, not only of completed work and work under construction, but also of the workmen of foreign countries, features of preliminary engineering work, preliminaries in building steam railroads in the Philippines, and various other scenes. At the back of the booklet is given a map of the world on which are plotted the locations of construction, operating and principal engineering contracts undertaken and reporting and engineering work done; with a key in explanation. A line drawn to connect them all encircles the world.

Twenty-five railroads reported gross earnings for the third week of September aggregating \$10,223,914, as compared with \$9,053,820 for the same period in 1908, \$9,379,650 in the third week of September, 1907, and \$8,718,745 in 1906. This is the first time that earnings have exceeded \$10,000,000, with the exception of fourth weeks of the month. In August net earnings of the railroads of the country, according to statistics of the *Financial Chronicle*, increased \$13,720,000, or 19 per cent. over August, 1908. Gross earnings were \$27,560,000 more. Compared with August, 1907, gross earnings were \$7,000,000 less, while net earnings were \$4,500,000 more.

August Exports and Imports of Iron and Steel

Our international trade in iron and steel completely reversed its form in August, according to the report of the Bureau of Statistics of the Department of Commerce and Labor. Our exports showed a handsome increase as compared with July, while a decrease was shown in the imports. The value of the total exports of iron and steel and manufactures thereof, not including ore, in August was \$14,136,219, against \$11,866,772 in July. The total value of the same class of imports in August was \$2,576,969, against \$2,903,235 in July.

The exports of commodities for which quantities are given totaled 105,695 gross tons in August, against 100,681 tons in July, 114,751 tons in June, 100,977 tons in May, 100,904 tons in April, 94,523 tons in March, 84,860 tons in February and 70,085 tons in January. The details of the exports of these commodities for August and for the eight months ending with August are as follows:

	Exports of Iron and Steel.			
	August.		Eight months.	
	1909.	1908.	1909.	1908.
	Gross tons.	Gross tons.	Gross tons.	Gross tons.
Pig iron.....	6,193	3,383	37,805	26,452
Scrap	729	1,012	20,050	14,437
Bar iron.....	936	659	8,937	4,801
Wire rods.....	309	153	9,699	3,904
Steel bars.....	6,111	2,817	44,721	28,639
Billets, blooms, &c....	9,309	6,865	84,119	79,015
Hoop, band, &c.....	322	535	2,045	3,148
Steel rails.....	26,739	27,608	166,306	138,787
Iron sheets and plates.	6,211	5,291	44,838	29,176
Steel sheets and plates.	9,605	5,476	62,897	37,986
Tin andterne plates.	618	164	6,215	11,331
Structural iron and steel	7,254	10,409	60,960	81,910
Barb wire*.....	5,265	4,528	44,914	48,320
Wire*	5,689	4,252	56,307	48,176
Cut nails.....	724	1,125	6,108	5,293
Wire nails.....	2,813	1,953	18,939	18,430
All other nails, including tacks.....	1,020	399	5,299	3,008
Pipes and fittings....	15,848	9,016	99,124	76,554
Totals.....	105,695	86,245	779,283	652,952

* Not separately stated prior to July 1, 1908.

† Figures are for July and August.

‡ Includes barb wire from January to June.

The imports of commodities for which quantities are given reached a total of 22,121 gross tons in August, against 29,136 tons in July, 19,402 tons in June, 18,352 tons in May, 17,772 tons in April, 20,714 tons in March, 19,418 tons in February and 19,782 tons in January. The details of imports of this class of products for August and for the eight months ending with August are as follows:

	Imports of Iron and Steel.			
	August.		Eight months.	
	1909.	1908.	1909.	1908.
	Gross tons.	Gross tons.	Gross tons.	Gross tons.
Pig iron.....	10,422	5,200	87,222	56,941
Scrap	2,125	200	4,377	3,262
Bar iron.....	1,381	971	9,944	14,316
Rails	2	84	382	1,094
Billets, bars and steel in forms n.e.s.....	1,335	963	10,419	6,610
Sheets and plates....	292	187	2,225	1,524
Tin andterne plates.	5,071	4,014	40,042	48,185
Wire rods.....	1,238	1,390	7,606	7,796
Structural iron and steel	265	85	3,914	1,472
Totals.....	22,121	13,154	166,131	141,200

The imports of iron ore in August were 209,855 gross tons, against 172,316 tons in July, 124,714 tons in June, 97,393 tons in May, 74,782 tons in April, 108,676 tons in March, 61,749 tons in February and 105,233 tons in January. Of the August imports 106,670 tons came from Cuba, 70,339 tons from Europe, 28,327 tons from British North America and 4519 tons from other countries. The total imports of iron ore for the eight months ending with August were 954,718 tons, against 424,963 tons in the corresponding periods of last year, and 865,657 tons in the same months of 1907.

The total value of the exports of iron and steel and manufactures thereof, not including ore, in the eight months ending with August was \$100,955,684, against \$105,258,962 in the corresponding period of last year, and \$129,400,247 in the same months of 1907. The corre-

sponding imports were respectively \$18,174,492, \$13,407,611 and \$28,795,578.

The Susquehanna Iron Company's Affairs.

The Susquehanna Iron Company, Columbia, Pa., is making extensive improvements at its Columbia and Susquehanna mills. The production of skelp iron is to be increased 50 tons a day and of muck bars 20 tons a day at the Columbia mill, the necessary improvements involving a cost of about \$50,000. The puddling capacity of the Susquehanna mill, which is now 50 tons a day, is to be increased to 100 tons; also at a cost of about \$50,000. The wrought iron pipe mill of this company has been running double turn since September 1, making 1000 tons a week. The demand for pipe has been so brisk and the company has booked so many orders that it is now 30 days behind in making shipments on contracts. The payroll is running over \$55,000 a month.

The company recently decided to increase its executive force to take care of its enlarged business. Charles B. Keller of Lancaster, Pa., who for many years was controller and vice-president of the Conestoga traction properties, was, some months ago, elected vice-president of the Susquehanna Iron Company. At a meeting held October 20 the directors elected Mr. Keller assistant to the president. E. T. Edwards, who has been general Eastern sales agent for several years, with headquarters in the Singer Building, New York, was elected vice-president, with headquarters hereafter to be at Columbia, Pa. He takes charge November 1, and will have general supervision over the affairs of the company, particularly the sales department. All matters pertaining to sales after November 1 will be handled at the home office in Columbia. The career of Mr. Edwards has been one of steady advancement. He started as shipping clerk at Columbia at the age of 17, and was manager when he resigned in 1898. He has had a varied and extensive experience in the pipe trade, and brings excellent qualifications to his new position.

A French Iron and Steel Works Directory.—There has just been published by the Comité des Forges de France, the Association of French Ironmasters, the Annuaire for 1909-1910, a portly volume, which is practically a directory of the iron and steel works of the country. It consists of lists of the works arranged by districts and by products, and for each concern in detail data relating to capital stock, organization, equipment and products, and in many cases output and number of workmen. It contains a good deal of miscellaneous information, such as the organization of the society for accident insurance, of the association for workmen's pensions and of the society for mutual protection against the consequences of strikes. There is a collection of statistics and a list of syndicates and trade organizations, and an elaborate chapter on labor legislation.

The Bituminous Coal Trade Association, of which L. N. Lovell is chairman and Henry S. Fleming is secretary-treasurer, has issued a handsomely printed pamphlet covering the production and shipments of bituminous coal in Pennsylvania, Maryland and West Virginia in 1908. It gives the production of coal and coke for each individual mine in the 20 bituminous districts of Pennsylvania, the production and shipments of each mine in the 20 anthracite districts of Pennsylvania, of coal and coke produced and coal shipped in West Virginia and of coal production in Maryland.

The United States Sherardizing Company, New Castle, Pa., controlling the sherardizing patents for this country and Canada, has recently licensed the following to sherardize their products on a royalty basis: American Tube & Stamping Company, Bridgeport, Conn.; General Electric Company of Canada, Toronto Ont.; Mark Mfg. Company, Chicago; Westinghouse Electric & Mfg. Company, East Pittsburgh, Pa., and Union Switch & Signal Company, Swissdale, Pa.

THE IRON AGE

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The Industrial Outlook in Great Britain.

The comments of British writers on the industrial situation in the United Kingdom are by no means cheerful reading. It is some time, in fact, since the discussion of Great Britain's position in international trade and the outlook for her home trade has been free from either a well-defined or an ill-defined fear of the future. The London correspondent of the *New York Evening Post* writing last week of conditions there said: "There can be scarcely a doubt that unemployment this winter will be worse than ever before; and unemployment, despite its fictitious and theatrical side, is one of the most serious problems now confronting the British people." It is true that a heated political campaign is now on in Great Britain, and that politicians have rather aggravated than allayed the discontent of wage-earners and unemployed. The discussion of the pending proposal for more heavily taxing accumulated wealth has fanned class feeling, and statements are made about industrial conditions that are manifestly inspired by a political purpose and should be so regarded.

However, no one who has read British comment on industrial and economic questions in the past few years has received any stronger impression from his reading than that the problem before British manufacturers and statesmen is a serious one. There is difficulty in sifting the temporary influences from those which are of a more permanent character. There have been intervals in these recent years when the British spirit of commercial mastery has asserted itself with something of the old time intensity. It was only last year that a London journal devoted to the iron trade read British iron manufacturers a lecture for their habit of pessimism. They were told that their lurking feeling of distrust was the cause of much of their failure to get on in the international race.

On the other hand, we do not forget the sharp resentment provoked by George R. Dunnell's articles in the *London Times* in 1900 and 1901 on "American Engineering Competition." Mr. Dunnell described what he saw in an extensive trip through engineering workshops in the United States. His deduction in general was that American push and labor-saving methods and the willingness to discard old machinery or old ways when something better was found to take their place was giving the United States a decided lead over Great Britain. While some British engineers conceded the force of Mr. Dunnell's criticism there was a general disposition to be-

lieve that the danger to British manufacturing prestige was overrated.

A few years later matters seemed to be going comfortably again with British manufacturers. In his presidential address to the Iron and Steel Institute in 1906 R. A. Hadfield laid stress on the fact that while the United States was great in industry and in its output of product for home consumption, Great Britain was pre-eminent in foreign trade. He estimated that if the rate which had prevailed in the first half of that year were maintained to the end the exports and imports of Great Britain in 1906 would reach the stupendous total of £1,000,000,000, and this proved to be not far from the actual. But in the past two years there has been no such occasion for boasting. The wave of pessimism is again sweeping the country. All indications seem untoward. So far as the iron trade is concerned about all the comfort that can be found is in falling back on a certain dogged insistence that exportation of iron and steel is a part of the British destiny. As Sir Hugh Bell put it on one occasion: Since iron and steel are chief among the things Great Britain has to offer in exchange for the products of other countries, the latter are in a sense bound to take British iron and steel. But there is keen appreciation at the same time of the fact that the burdens upon manufacturers there, in workmen's compensation, old age pensions and the increasing weight of taxation in the carrying out of the Socialist programme, are making their position harder to maintain with every year. In the United States, at the same time, the open shop movement is gaining ground and methods of reducing unit cost are employed by a steadily increasing number of companies in iron and steel and metal working trades.

It is to be taken as proof of the decline of initiative in the British iron trade that so much importance is attached to the possibilities of an overflow demand from the United States. For weeks the Middlesbrough warrant market and the pig iron market as well have been watching for the beginning of a demand from this country that shall take up their accumulated stock and put life into a situation that has dragged on without promise for months. At the recent annual meeting of an English iron and shipbuilding company the chief encouragement held out by the president for the ensuing year was "the expectation that the United States will take a good deal of British pig iron the coming winter." Each time in recent years that the prosperity of the United States has been so abounding that pig iron must be imported from abroad, British producers have been ready to supply the demand. The very fact that such capacity is always available to take care of what spills over from the United States and Germany is a sign of decadence.

That British iron manufacturers are to profit to any important extent by the present movement in the American iron trade is much to be doubted. The rapid increase in our pig iron production may make more than scattering imports unnecessary. The view is now expressed that industrial improvement in the British Isles need not be looked for this year. There will, without doubt, be an adjustment of the situation yonder after the campaign disturbance over the budget has quieted down. But there will still be left the problem of the unemployed, which yearly grows more serious, and that of the increasing handicaps upon manufacturers, due to the legislative proposals that apparently look to a redistribution of wealth. And so far as the more obvious indexes of trade movements are consulted, the opinion is commonly expressed that British industrial conditions will be worse before they are better.

Commissioners' Demurrage Rules.

Attention was recently called by *The Iron Age* to the fact that a committee of the National Association of Railway Commissioners, with a member of the Interstate Commerce Commission as chairman, has in charge a proposed national code of demurrage rules, which will be submitted for adoption at the annual meeting of the association at Washington, November 16. No official copy of this proposed code has been made public, and its provisions have been guarded from shippers with considerable secrecy, but it is understood that the document contains features that will merit careful consideration before they are authorized by the formidable joint authority of the Interstate Commerce Commission and the State commissions.

An unofficial copy discloses, among other interesting points, the remarkable fact that no allowance has been made of switching time for industrial switching railroads, or for industries which do their own switching. The regular 48 hours will be counted, for loading or unloading, from the first 7 a.m. after cars are placed on the interchange track connecting with such industries. In Ohio and in the Pittsburgh District the rules which have been in force allow 32 hours for switching, in addition to the regular 48 hours for loading or unloading; and in the Chicago District this allowance has been 36 hours. The railroads, under the per diem rules of the American Railway Association, make similar allowances of one to three or four days, in addition to the time required for loading or unloading, where one railroad performs terminal switching service for another. If this omission appears in the official text of the code, it is undoubtedly an oversight on the part of the commissioners, but it reveals the necessity for public consideration and scrutiny of any measure dealing with the industrial traffic of the country.

The unofficial text discloses a new provision which may prove of especial interest to contractors who handle structural material, water pipe and other commodities which are usually unloaded on team tracks. If the tracks designated by the consignee are fully occupied, or delivery cannot be made there for reasons beyond the control of the carrier, the cars will be placed at the nearest point accessible to the consignee. The general tenor of this code of rules is such that this provision contains possibilities of great hardship to the consignee, as he is given no choice in the matter, and his material might be tendered him at a point ten miles away, in a large city. The rules do not give the agent of the railroad discretion to hold the cars until they can be placed where the consignee wants them. There may be rules of this character in some of the demurrage districts, but they do not appear in the Pittsburgh or Chicago districts, or in the rules effective in Ohio, Indiana and other leading States, and it is open to question whether this provision is necessary in a code to become effective throughout the entire country.

The new rules provide a very exact and commendable form of notification of the arrival of cars, giving the point of shipment, car initials and number and the contents, and, if transferred in transit, the initials and number of the original car. In case the car is not placed on a public delivery track within 24 hours after notice of arrival has been sent, a notice of placement shall be given to the consignee. Industrial consignees, however, are expressly excepted from the protection that would be given them by this rule. The placing of cars on the private siding or the interchange track of an industry is

defined as notification. In many cases cars arrive at industries with incorrect or indefinite billing which makes it impossible to determine where they came from. Often, for this reason, an industry receives and uses material that had been consigned to some one else, or discovers after cars have been received or unloaded, that there has been a mistake. A great deal of confusion might be avoided if the industrial consignee had the same right that is conceded to those who receive cars on team tracks—of having specific, correct billing before accepting a car and making it subject to demurrage rules. The railroads, in practice, have universally conceded this right to industries in the past, but in a code which has the effect of a legal enactment they may not have the same latitude.

The code contains a new rule on private cars, which will require careful examination when the official text is available, as it differs materially from the rules now in effect throughout the country. It appears to make private cars subject to regular demurrage rules and charges at all times when under load, except only when they are owned by an industry which does its own switching and they are on its own private terminal; and even then, if a car of this class comes home under load and is received on the tracks of the owner, he would owe the railroad demurrage unless he unloads it within 48 hours. This provision is so remarkable that it is given below as it appears in the unofficial text of the code:

Note.—Private cars while in railroad service, whether on carrier's or private tracks, are subject to these demurrage rules to the same extent as cars of railroad ownership. Empty private cars are in railroad service from the time they are placed by the carrier for loading or tendered for loading on the orders of a shipper. Private cars under lading are in railroad service until the lading is removed and cars are regularly released. Cars which belong to an industry performing its own switching service are in railroad service from the time they are placed by the industry upon designated interchange tracks, and thereby tendered to the carrier for a movement. If such cars are subsequently returned empty they are out of service when withdrawn by the industry from the interchange; if returned under load, railroad service is not at an end until the lading is duly removed.

A bunching rule appears in the code, but so restricted that it will prove of little interest to shippers. It applies only where regular daily shipments, over one route to one consignee at one point, are bunched "as a direct result of the act or neglect of carriers," in which event the consignee will be allowed the same free time as he would have been entitled to had the cars been delivered in accordance with the daily rate of shipment. Many large shippers have discovered that a railroad has no right to collect demurrage under such circumstances, and in due time this will become common knowledge, so the apparent concession to the shipper of a bunching rule is not of great moment.

An average rule also appears in the unofficial text, but with a rider which will require consideration. Cars, in applying this rule, will be divided into two classes, the first comprising box and refrigerator cars, and the second all other cars. Credit obtained for unloading cars of one class in a day will not be applied on cars of the other class which may be detained longer than two days. Industries which receive coal, ore or other materials in hopper cars, for example, would get no credit on them to apply on box cars; and credit on box cars would not apply on coal held more than 48 hours. The shipper who works under this average rule would not be given any allowance for bunching, weather interference, frozen lading, floods or snow.

There are no allowances of time for analysis of pig iron, bracing or blocking cars, or other necessities of the iron and steel industry which are provided for in im-

portant demurrage districts under existing rules. The exceptions for weather interference are broader and more explicit than in many of the existing codes. In general construction the rules as they appear in the unofficial text follow closely the standard code of the American Railway Association. The exceptions which have been discussed are of a remarkable character when it is considered that they emanate, not from railroad officials or a committee of car service managers, but from a committee of public officials representing the Interstate Commerce Commission and the railroad commissions of all the States.

The September Balance of Trade.

Although the value of the figures showing the monthly balance of exports of merchandise in favor of the United States has often been decried by political economists, nevertheless when a favorable balance is reported by the Bureau of Statistics of the Department of Commerce and Labor it is received with gratification in financial as well as general business circles. It is therefore interesting to note that, after several months of unfavorable international balances, the month of September has shown an excess of exports of merchandise amounting to \$32,948,767. The exports for the month, \$153,890,409, broke the record for the period. It was thus the heavy exports and not diminished imports which caused this favorable balance. The imports, in fact, were very heavy, reaching an aggregate of \$120,941,642. For the 12 months ending with September the excess of exports of merchandise over imports was \$296,485,061.

At the meeting of the Industrial Education Committee of the American Federation of Labor at Washington last week, expression was given generally to this sentiment in substance: That if the public does not introduce "vocational" manual training courses in the common school system, "capital will seek to set up a specialized and contracted system of education, fraught with evils to the workingmen's children." Yet every organized effort of manufacturers, through national and local associations, to increase the supply of skilled workmen has had as one of its aims the broadening of the training of the apprentice beyond the limits of his shop task. The union long stood against all training of apprentices that was not limited to the "contracted system" of shop routine, subject to union limitations and control. Its new-found fear lest employers will not take a broad view of the apprentice question is far from ingenuous.

Notable Contracting Work.—The September number of *Mine and Quarry*, published by the Sullivan Machinery Company, Railway Exchange Building, Chicago, contains among other articles descriptive of tools and machinery manufactured by this concern, two special articles, one of which gives some interesting facts relative to the construction of the Gunnison tunnel of the Uncompahgre irrigation project in Montrose County, Col., which was opened on July 6, 1909. Some of the engineering difficulties encountered in the construction of this tunnel, the longest in America, are discussed. The other article deals with the ventilation in an Indiana colliery and recounts some of the changes that have taken place in mine ventilating practice including the substitution of high speed equipment for slow speed fans, which, as the extent of mine workings increase and deepen, fail to develop the desired efficiency. Both of these articles as well as one of quarrying marble in Tennessee, are attractively illustrated by numerous halftone engravings.

Piecework in Machine Shops.

Machinists' Union Finds It More and More the Rule.

The large proportion of strikes in machine shops due to the introduction of piecework and the failure of the union to win such strikes are the significant facts in the present situation as it affects the International Association of Machinists. The president of that organization said in his annual address at its recent national convention:

In every report submitted by me I have called attention to this subject. The question as yet has not been handled by any of our conventions in a manner that would indicate to our members our true position on piecework. Heretofore I have pointed out the inconsistent position we occupy by permitting our members to work in a shop where piecework is in existence, while we refuse the right of a member employed, say, across the street, to introduce the system.

At least 50 per cent. of the strikes in which our members are involved result from the attempt to establish piecework, and 60 per cent., if not more, of our money expended in benefits is the result of piecework strikes, yet we cannot credit ourselves with preventing the growth of this system, because, in my opinion, it is largely on the increase. This is due to the fact that thousands of machinists look with much favor upon piecework, if operated under what they are pleased to call fair conditions. It is difficult and sometimes impossible to induce men working under what they term an honest system of piecework to vote for its abolition, or, if necessary, go on strike against its introduction.

Several of the largest industries in our line have piecework in some phase or other introduced in all their departments. We have been unable to prevent its introduction or growth, and, worse still, we have not succeeded in organizing these industries. For instance, the building of new locomotives in North America is being done under piecework conditions. Practically all the electric plants are operated on the piecework basis. The building of automobiles is on the piecework basis, with the possible exception of the tool room. Other large industries might be mentioned in which tens of thousands of men are employed who are eligible to membership in our association, but the fear that they may be compelled to strike against piecework is used as an argument why they will not join with us.

I have given my best thought to the question of piecework, have devoted a great amount of time seeking information with a view to solving this vexed problem, and after an experience of many years I am convinced that our method up to date in dealing with this subject is not in keeping with the usual progressive methods adopted by our organization. I am, therefore, of the opinion that more latitude should be given the international president and General Executive Board in dealing with the piecework and kindred questions, so that if opportunity presents itself for organizing any of the industries where it is in existence, and an arrangement can be made to properly regulate piecework as we now regulate the day rate, we would be in a position to take advantage of these opportunities.

In *The Iron Age* of October 14 was reproduced the statement of P. R. Cobb, made in a discussion at the recent meeting of the Iron and Steel Institute in London, that three furnaces of the type employed in the manufacture of pig iron at the Domnarfvet Works in Sweden had been contracted for for installation at the steel works at Sault Ste. Marie, Ont. The Lake Superior Corporation now asks that the above statement be denied.

The Newark Foundrymen's Association will, in lieu of its usual monthly meeting, journey to New York on the evening of November 2, when the members will enjoy a dinner and theatre party.

Customs Decisions.

Rivets for Ornamental Work.

The Board of United States General Appraisers has partially sustained a protest filed by J. G. Braun, of Chicago, regarding the classification of articles invoiced as "gitterkugeln," and "gittenniete." The former articles are globular or round balls of iron drilled or bored through the center, while the latter are so-called rivets of iron, made up of short metal shaft on the top of which is a head either in the form of a ball or a pyramid. The so-called "gittenniete" articles are used in riveting together ornamental iron work, and are designed and adapted for use in the construction of ornamental gates and fences. The custom house authorities assessed duty either under paragraph 127 as forgings, or under paragraph 193 as manufactures of metal. The importer claimed either under paragraph 163 as nuts of wrought iron or steel, or under paragraph 167 as rivets of iron or steel. General Appraiser Fischer, who writes the decision for the Board finds that the articles invoiced as "gittenniete" are in fact gate or rail rivets. The official exhibits disclose two kinds of this article. The one is described as a ball-head rivet and the other as a diamond-head rivet.

According to the witnesses for the government, the articles would not be termed in trade as "rivets," and are not the commercial rivet provided for in paragraph 167 of the Dingley tariff. These witnesses further give as their opinion that while the diamond-head form of the articles may fall within the trade meaning of the term rivets, they were positive that the ball-head style would not be dealt in by the trade as rivets. In discussing the question in his decision, General Appraiser Fischer makes it plain that he does not agree with the Government witnesses. He says:

It is not clear to us why any distinction should be drawn between any of these gate or rail rivets. In our opinion, if the diamond-head rivet is to be regarded as a rivet under paragraph 167, the ball-head rivet is to be considered in no different light. An examination of the exhibits satisfies us that the merchandise invoiced as "gittenniete" is fairly within the provisions for "rivets" of iron. We so hold.

The claim of the importer so far as it relates to the metal articles invoiced as "gitterkugeln" we regard as not well founded. We find that the globular or round balls of iron are not "nuts" of wrought iron or steel, for which provision is made in paragraph 163. The testimony would show that the articles are not "nuts" within the trade meaning of that term as usual in the metal schedule of the tariff, and it also appears that they are termed and catalogued as "balls" rather than as "nuts." We sustain the protest so far as it relates to rivets, and overrule it in all other respects. The decision of the collector is modified accordingly.

Scrap Steel Defined.

The Treasury Department decided October 23, and gave notice that no scrap iron or scrap steel is entitled to classification under paragraph 118 of the new tariff law unless in its condition as imported it is unfit for use until reduced by heat from a solid to a fluid state. In the Panama Canal zone there is a large amount of railroad scrap iron to be sold that will be affected by this decision.

The action is on questions presented by the Collector of Customs at Philadelphia. Various business interests had asked the Government for an interpretation of the term "melting" in that paragraph of the new tariff law which imposes a duty of \$1 per ton on wrought and cast scrap iron and scrap steel. The new law provides that "nothing shall be deemed scrap iron or scrap steel except waste or refuse iron or steel fit only to be remanufactured by melting."

The department holds that scrap iron or scrap steel which may be remanufactured by being subjected to intense heat and then rolled or hammered to the size or shape desired is not scrap iron within the meaning of the new law.

The German shipbuilding industry is flourishing. A Berlin cablegram states that the Vulkan Shipbuilding Company has decided to invite subscriptions for raising

its existing capital of \$2,500,000 to \$3,795,000. The company has never before appealed to the public for capital. The additional funds will be devoted to equipping the great yards at Hamburg.

The Hamilton Iron & Steel Company's Affairs.

At a meeting of the stockholders of the Hamilton Iron & Steel Company, Hamilton, Ohio, held October 26, all leasing propositions were rejected and the company decided to proceed under its own management. This is the gist of the decision by vote of the stockholders on the proposition of a syndicate composed of M. L. Sternberger of Jackson, Eugene Zimmerman of Cincinnati and others to take over and operate the plant on a 10 years' lease. A total of about 7000 shares were voted out of a possible 10,000, negating the proposition, which was understood to have had the sanction of a majority of the stockholders just prior to the meeting. Neither parties to the transaction will talk, but it is reported that Pittsburgh capital behind Vice-President E. N. Ohl and President George L. Pearson stepped in at the last minute. The George B. Cox holdings of stock were purchased by this interest at the meeting. The annual meeting and election will be held at an early date, having been postponed from the summer months. W. R. Todd of the Board of Directors and Secretary and Treasurer R. E. Field make the simple statement that arrangements are perfected for going ahead. Mr. Field adds that the furnace will go into blast approximately November 15, that ore is arriving at the rate of 1000 tons per day, and that some repainting to the lining will soon be completed.

The furnace was built in 1907 and is of 300 tons daily capacity. The company is capitalized at \$1,000,000. George L. Pearson is president; E. N. Ohl, vice-president; R. E. Field, secretary and treasurer, and with W. R. Todd, N. S. Keith, R. W. Neff and O. V. Parrish constitute the Board of Directors. It is stated that Frank L. Perin of Cincinnati has become interested in the company and that he will probably succeed Mr. Pearson as president.

The Technical Publicity Association's October Meeting.

The first of the Technical Publicity Association's monthly meetings for 1909-10 was held on the evening of October 14, in its headquarters, 14 Gramercy Park, New York. There was a good attendance. After an informal dinner came an interesting programme. The president of the association, Charles S. Redfield, advertising manager of the Yale & Towne Mfg. Company, was toastmaster. The only extended address was that of George French, editor of *Advertising and Selling*. Preceding his remarks the attention of the members was occupied with reports of committees. The chairmen who were called upon outlined the work to be done during the winter months. Howard M. Post, advertising manager of the Western Electric Company, told of plans for a systematic, analytical study of effectually tracing results from trade paper advertising. The keying method, he said, has proved inadequate. At the conclusion of a discussion of this subject, in which every point of view was presented. Mr. Post was made chairman of a committee to outline this study work for the association. Mr. French then spoke. His remarks were an interesting presentation of the psychological and artistic aspect of advertising. His hearers were taken into the field of optics and shown the effect advertisements have upon the eye of the reader. Mr. French spoke throughout with much earnestness. His talk was highly appreciated by the advertising men present, among whom were a number of trade paper publishers. Questions were asked during the course of his remarks and a lively discussion ensued at the close. After disposing of business matters the association adjourned to meet November 11.

Vice-President J. W. McQueen of the Sloss-Sheffield Steel & Iron Company, Birmingham, Ala., informs the *Manufacturers' Record* that the Hattie Ensley Furnace, which had been in blast five years last July, is still running and making an output of considerably over 200 tons a day.

PERSONAL.

Herman S. Hastings, who has been secretary of the United Metal Trades Association of the Pacific Coast for the past two years, with headquarters at Seattle, Wash., has resigned to become connected November 1, with the Independent Foundry Company, Portland, Ore. His successor in the United Metal Trades Association work has not yet been chosen.

G. F. Bailey has resigned the office of vice-president and severed his connection with the Taplin Mfg. Company, hardware specialists, New Britain, Conn.

Ivy Lee, who has for some time been in charge of the publicity bureau of the Pennsylvania Railroad Company, has resigned to take charge of the European business of Harris, Winthrop & Co., bankers, who will open branch offices in London and Paris. He will be succeeded by J. W. Lee, Jr., who has been his assistant.

John F. Harris of Harris, Winthrop & Co., Chicago, has been elected a director of the Republican Iron & Steel Company, succeeding H. S. Black.

A. W. Thompson, president of the Inland Steel Company, has been made a member of the executive committee of the Southern Iron & Steel Company.

Wm. A. Salomon of Salomon & Co. has been elected a director of the International Steam Pump Company.

James McNaughton, manager of the Schenectady works of the American Locomotive Company, has been elected a director of the company to succeed Joseph Bryan, Richmond, Va., deceased. Dumont Clarke has been chosen director to succeed R. J. Gross, New York, retired.

John D. Rockefeller, Jr., has been elected a director of the Colorado Fuel & Iron Company to succeed E. H. Harriman. Joseph Chilberg, manager of sales, Denver, has been made a member of the board, succeeding Judge D. C. Beaman, general counsel. To succeed Judge Beaman as secretary of the company Richard C. Hart has been chosen. L. M. Bowers becomes chairman of the board.

R. E. Christie, heretofore connected with the Crucible Steel Company of America as a salesman in the New York and Boston territories, has been made assistant manager of the Boston branch of that company.

Dr. Eugene Haanel, Director of Mines, Ottawa, Canada, has been elected president of the American Pent Society.

Charles M. Jarvis, New Britain, Conn., vice-president of the American Hardware Corporation, has been elected a director of the Colt's Patent Fire Arms Mfg. Company, Hartford, Conn., to fill the vacancy caused by the death of Lewis C. Grover.

W. J. Clark, for some years with the Pennsylvania Engineering Works, New Castle, Pa., is now with the sales department of the New Castle Forge & Bolt Company, New Castle, Pa.

John C. Cromwell of the Garrett-Cromwell Engineering Company, Cleveland, has returned from a European trip.

R. H. Wilkinson, formerly superintendent of the Niles Furnace of the Carnegie Steel Company at Niles, Ohio, has been appointed superintendent of the blast furnace of the Struthers Furnace Company at Struthers, Ohio, succeeding S. A. Richards resigned. Mr. Wilkinson is succeeded at the Niles Furnace by M. J. Scammel, formerly employed at the Ohio Works blast furnaces of the Carnegie Steel Company at Youngstown.

H. S. Snyder, vice-president of the Bethlehem Steel Company, is in Cuba.

The September number of the *Gasuco Herald* is the first issue of a new house organ published by the Georgia Supply Company, Savannah, Ga., and pertains to its line of supplies and machinery. The purpose of the booklet is to acquaint the trade with what the company has to offer, and does so with the addition of a little myth, wisdom and wholesome advice. Brief biographies of the salesmen are given, and information concerning the Savannah home of the company and its Jacksonville branch.

Specifications for Light Rails.

The desirability of specifications for light rails has been emphasized by communications appearing in *The Iron Age* of August 19, 1909, page 558, and the issue of September 9, page 784. The *Railroad Gazette* presents the following as suggested specifications, with the comment that "light weight rails are frequently subject to just as severe wear as the heavier standard sections, and while the results of failures are not so serious in loss of life, they may frequently occasion expense well in proportion to the comparative costs."

Specifications for Steel Rails Weighing Less Than 45 Lbs. Per Yard.

1. Rails may be rolled from old steel rails or from billets.
2. When rails are rolled from old steel rails the stock shall be free from slivers, fins, cracks or other defects which will prevent a sound finished product.
3. When rails are rolled from billets the billets shall be of a uniform character of steel. None shall be from discard of ingots, and special precautions shall be taken to avoid the use of billets with piping, segregation of elements or slag which will roll to an unsound product.
4. Rails shall conform to a chemical composition of not more than 0.10 per cent. phosphorus, 0.20 per cent. silicon, 0.80 per cent. manganese, 0.06 per cent. sulphur and from 0.30 to 0.50 per cent. carbon.
5. Section shall conform accurately to template. A variation in height of 1-32 in., either more or less, will be permitted.
6. Rails will be accepted and paid for according to weight, and a variation of 1 per cent. on an entire order permitted.
7. The standard length of rails shall be 30 ft., with random lengths between 22 ft. and 30 ft. permitted, in even feet.
8. Circular holes for splice bars shall be drilled or punched.
9. Rails shall be straightened while cold, of full section, smooth on head, free from cracks, slivers, injurious seams, evidences of burning or other defects, and sawed at ends within 1-16 in. of exact square.
10. The purchaser shall be privileged to send an inspector to the works, who shall be afforded all facilities by the manufacturer to satisfy him that the material is furnished in accordance with these specifications.

"The foregoing specifications, or similar ones, will serve in placing an order, and after the order is given an inspector should see that they are carried out, and pass upon the finished rails, particularly examining them for surface defects. If desired, occasional rails can be drilled and the drillings tested by chemical analysis to determine the general uniformity of the chemical composition and compliance with the specifications."

The Lewis Foundry & Machine Company.—This company, whose plant is at Groveton, near Pittsburgh, is operating to normal capacity, and prospective work justifies it in employing more draftsmen than usual. A recent shipment consisted of a bloom shear for the Algoma Steel Company, Sault Ste. Marie, Ont., while other contracts in hand include the following: Interstate Iron & Steel Company, Chicago, one 22-in. bar mill; Cambria Steel Company, Johnstown, Pa., one beam straightener, capacity up to 24 in., and another beam straightener, capacity up to 8 in.; Susquehanna Iron Company, Columbia, Pa., one 18-in. muck mill, complete with rolls; Blue Island Car & Equipment Company, Pullman Station, near Chicago, one 20-in. muck and bar mill, one 60-in. squeezer, and an engine-driven lever shear, capacity 2½ in.

Bank clearings throughout the United States have been of record breaking volume for several weeks. In the week ending October 23 the total of all the country's clearings was \$3,607,000,000, within ½ per cent. of the highest record of two weeks ago, and 34 per cent. larger than the corresponding week of 1908. In amount, the increase over a year ago was \$916,212,000. New York City's gain was 44 per cent.; Boston's, 25; Philadelphia's, 40; Chicago's, 16.

The fall meeting and dinner of the Cleveland branch of the National Metal Trades Association were held at the Cleveland Athletic Club, Wednesday evening, October 27. The members of the Administrative Council of the National Association, who held a meeting in Cleveland on that day, were guests at the dinner.

The Pittsburgh Gage & Supply Company's Rapid Growth.

About 16 years ago W. L. Rodgers, now president of the Pittsburgh Gage & Supply Company, commenced the sale of a few steam specialties, which was followed by the establishment of a mill and mine supply business in a small building at the corner of Second avenue and Market street, Pittsburgh. The stock of supplies and specialties carried was not large and the capital employed very limited. The floor space occupied at that time was about 1000 sq. ft. The business steadily increased until the quarters were entirely too small, and the jobbing department was moved to 309 Water street. Gradually more departments were added, more storage room was acquired and the company which grew out of this venture became a prominent factor in the manufacturing and jobbing business in steam specialty supplies in Pittsburgh. The company acquired some new inventions covering steam specialties and, recognizing the great possibilities of the business, established a manufacturing plant at Thirty-first street and Liberty avenue, Pittsburgh, devoted entirely to the manufacture of high pressure steam piping and other Pittsburgh steam specialties, which have been extensively advertised and which are now well established in the trade.

One of the most serious difficulties encountered in the jobbing and manufacturing business is the question of transportation, and the continued growth of the company was threatened through the increasing cost of handling and hauling all materials by wagons to and from various railroad stations. It was then decided to acquire a site with better shipping facilities, and the present location at Thirtieth street and Liberty avenue was purchased about three years ago. The buildings there erected and the storage yards occupy nearly all of the property from Thirtieth to Thirty-first streets. The floor space of the factory is more than 225,000 sq. ft. The company now controls a joint switch into its own property, having connection with the Pennsylvania, Baltimore & Ohio, Buffalo, Rochester & Pittsburgh, and Junction railroads, enabling it to accept deliveries and make shipments promptly from its own plant. Through daily car service has been established to several mining and manufacturing centers, thus insuring prompt deliveries and a material reduction of costs, two most essential features.

The buildings now owned and occupied by the company are thoroughly modern structures, having steel frames, brick and concrete construction throughout, and provided with all the latest improved appliances for the quick and economical handling of the business. The building equipment includes immense elevators and automatic sprinkling systems. The manufacturing departments are equipped with the latest and best machine tools throughout, each department being operated by electric motors. A thoroughly modern stock system enables the sales and purchasing departments to keep in close touch with the 16,000 different articles carried by this modern supply house.

In addition to carrying a very large stock of mill and mine supplies, the Pittsburgh Gage & Supply Company also manufactures a line of specialties made in the several departments into which the works are divided. In the sheet metal department it makes all kinds of sheet metal and light structural work, including White Star oil filters, tanks, riveted pipe and Pittsburgh exhaust heads. The pipe shop is equipped with pipe machines, furnaces, bending tables and pneumatic appliances for cutting, fitting and bending pipe up to 24 in. in diameter. In this department piping materials are prepared for complete power plant installations. The company also operates a large machine shop, where flanged fittings and iron body valves of all sizes and descriptions are made, as well as Pittsburgh steam separators and Pittsburgh safety water columns. There is also a gauge department where steam, vacuum, hydraulic and test gauges are made, and also the Pittsburgh recording gauges, so well known to the trade. There is also a pattern shop, where wood and metal pat-

terns for fittings, valves, &c., are made. This department is equipped to produce every possible necessity in its line, and if special articles are required, can turn out the patterns for them promptly. The company also operates its own brass foundry, with molding machines for making brass specialties as well as general work. Castings such as mill bearings are also made, as well as castings for extraordinary duty which require expert attention and uniformity.

In the brass machine shop one section is devoted exclusively to the manufacture of clean seat globe, angle and blow-off valves. This department is equipped with modern tools to insure accuracy of work, every piece being made absolutely interchangeable. A specialty of the company is the clean seat globe valves, which are made of the best quality of metal and extra heavy throughout, their principal feature being the arrangement of the seat and disc, whereby, when the valve is closed, the pressure cleans the face of the seat and disc, thereby assuring tight valves, at all times and under the hardest possible service.

The officers of the company are: W. L. Rodgers, president; M. R. Porter, vice-president and sales manager; R. F. Ramsey, treasurer; A. F. Maxwell, assistant treasurer; George L. Knight, secretary and purchasing agent; R. F. Blair, assistant secretary; F. J. Teufel, auditor, and George H. Davis, shop superintendent.

The Steel Corporation's Quarterly Statement.

The United States Steel Corporation has issued its statement of earnings, covering its subsidiary companies, for the quarter ending September 30, 1909. It compares as follows with the corresponding quarter of 1908:

	1909.	1908.
July earnings.....	\$12,530,770	\$8,599,630
August earnings.....	12,437,754	9,152,311
September earnings.....	13,278,383	9,354,333
Total after deducting all expenses incident to operations, including ordinary repairs and maintenance of plants, employees' bonus funds and interest on bonds and fixed charges of subsidiary companies.....	\$38,246,907	\$27,106,274
Less charges and appropriations for the following purposes:		
Sinking funds on bonds of subsidiary companies	\$506,717	\$436,675
Depreciation and reserve funds.....	6,885,171	5,359,182
	\$7,391,888	\$5,795,857
Net earnings.....	\$30,855,019	\$21,310,417
Deduct interest for the quarter on U. S. Steel Corporation bonds outstanding	\$5,885,900	\$5,946,809
Sinking funds on the U. S. Steel Corporation bonds:		
Installments	1,012,500	1,012,500
Interest on bonds in sinking funds...	413,562	352,653
	\$7,311,962	\$7,311,962
Balance.....	\$23,543,057	\$13,998,455
Dividends for the quarter on stocks of U. S. Steel Corporation:		
Preferred, 1% per cent.....	\$6,304,919	\$6,304,919
Common, 1 per cent. (½ per cent. in 1908)	5,083,025	2,541,513
Surplus for the quarter.....	\$11,387,944	\$5,152,023
Less appropriation on account of expenditures made and to be made on authorized appropriations for new plants, construction, &c.....	10,000,000	
Balance of surplus for the quarter	\$2,155,113	\$5,152,023
Unfilled orders on hand September 30, tons	4,796,833	3,421,977

The earnings for the quarter ending June 30, 1909, were \$29,340,491 and for the quarter ending March 31 were \$22,921,268.

The unfilled orders June 30, 1909, were 4,057,939 tons, and March 31 were 3,542,592 tons.

The new ore dock to be constructed by the Chicago & Northwestern Railway Company at Escanaba, Mich., will have 400 pockets and loading spouts, making it one of the largest in the world.

OBITUARY.

ALFRED R. WHITNEY.

Alfred Rutgers Whitney, for a long period a prominent figure in the iron trade of New York City, died at his residence at Morristown, N. J., October 22, aged 74 years. A native of New York City, he begun his business career as a grocery clerk, changing to the iron trade in 1860, when he entered the office of the Abbott Iron Company. Soon after he became connected with Thomas F. Rowland, and they supplied the structural iron material for the building of the famous Ericsson gunboat Monitor which in March, 1862, destroyed the Confederate gunboat Merrimac. In 1865 Mr. Whitney embarked in the iron business for himself, and in 1869 obtained the contract for the iron work used in the construction of the Grand Central Station, one of the largest contracts of its kind that had been given in this country up to that time.

During the building of the elevated railroads in the '70s, Mr. Whitney constructed the old Greenwich Street elevated road, now a part of the Ninth avenue system, and later he constructed the Second and Third avenue elevated roads and a large portion of the Sixth avenue elevated road. He did much to popularize the use of structural shapes in building construction. At first his connections in this line were with other makers, but for many years he was the metropolitan agent for the Carnegie Steel Company, and was taken into partnership a few years before his retirement from active business in 1900. He leaves nine children, five sons and four daughters. His sons are Alfred R., Jr., president of the Whitney Building Company, 135 Broadway; Livingston H., Le Roy, Frank and Maurice.

NOTES.

WM. H. MATTHEWS, aged 68, whose death was announced last week, was for many years treasurer of the New Bedford Copper Company. Afterward he was connected with the Ansonia Brass & Copper Company and for several years was in the office of Hendricks Bros., New York. He leaves a widow and a son.

EDWIN J. WATSON, Worcester, Mass., assistant to General Superintendent C. L. Miller of the American Steel & Wire Company, died October 24, aged 62 years. He was well known for his pioneer work in cold rolling and the production of flat wire at the works of the Washburn & Moen Mfg. Company, and was superintendent of that department at the Worcester plant when it was acquired by the American Steel & Wire Company.

JOSEPH B. BANCROFT, president of the Draper Company, Hopedale, Mass., and one of the most prominent figures in the textile machinery industry in the country, died October 25, aged 88 years. He was a native of Uxbridge, Mass., and began his career with the Drapers when he was 22 years old, entering the works as a machinist. For years he was the superintendent and agent, and when the business was incorporated was made the vice-president. Upon the retirement of Gen. William F. Draper, Mr. Bancroft succeeded him as president. He leaves five children, one of whom, Eben D. Bancroft, is financial head of the Draper Company.

LEMUEL COBURN, Holyoke, Mass., founder and president of the Coburn Trolley Track Company, died October 26, aged 79 years.

WILLIAM H. LUTTON, SR., who was prominent in the iron industry in Pittsburgh half a century ago, died at his home in Cleveland, Ohio, October 24, aged 86 years. He located in Cleveland 46 years ago, and with others started the American Sheet & Boiler Company, of which he was manager and part owner until 1876, when the plant became a part of the Cleveland Rolling Mills.

THOMAS A. MACK, for many years identified with the iron industry, died at the Engineers' Club, New York, October 26, aged 65 years. Born in Scotland, his first service in this country was as a chemist with one of the Hocking Valley furnaces. Later he was identified with the development of the Southern pig iron industry, and was for years a leading seller of Southern pig iron in

the Cincinnati market. Retiring from business, he traveled all over the world for years, and finally settled down in New York.

GEORGE T. BARNESLEY, president of the Engineers' Society of Western Pennsylvania, died suddenly October 23, in his office in Pittsburgh. He was born in Montgomery County, Pennsylvania, was graduated from Swarthmore College as a civil engineer, and became an expert in bridge and tunnel construction. At the time of his death he was chief county road engineer of Allegheny County. He leaves a widow and one son.

JAMES W. BROWN, president of the Colonial Steel Company, Pittsburgh, died suddenly October 23.

A Method of Saving Brass Skimmings.

The Metal Dross Economy Company, Bristol, Conn., has developed a process for saving skimmings in the brass foundry, that is calculated to increase the amount of metal recovered, and at the same time effect a saving in fuel. A skimming tank is employed, consisting of a cast iron box, 20 x 22 in., and 16 to 20 in. deep. It is covered with a steel top, in which there is an opening about 8 in. square in the shape of a funnel. Over this opening a top shield is placed standing at about 45 degrees. This protects the caster from the heat, dirt and a great deal of the smoke. The tank can be set either below or on the floor level, so that the crucible will be 4 or 5 in. above the tank. The crucible filled with brass is brought up to the tank, and the dross skimmed directly into the water. This immediately stops the spelter smoke and does away with the skimming heap. As soon as the dross strikes the water all oxidation of metal ceases. The oxide of zinc separates from the metal as it reaches the water, and takes the form of pellets of varying size. When the skimming has been completed, the tank is ready to clean out. The slimes and metal are shoveled out and washed through a 1/2 in. and afterward a 40-mesh riddle. The skimmings, if desired, may be put into a barrel, and kept wet and afterward cleaned at any time. Charcoal skimmed from the surface of the water in the tank may be used again.

The New York University, New York City, announces the inauguration of a department of journalism in its School of Commerce, Accounts and Finance. A prospectus just issued dwells with some force on the attention which will be given by this department to trade paper journalism. It states that "trade and financial journals have become within recent years a powerful force in business life." Those who are at the head of the new department are practical newspaper men, some of whom have been on the staffs of trade and financial journals.

The fortnightly report of the American Railway Association on the equipment situation in the United States and Canada shows that on October 13 there were 12,546 freight cars on sidings throughout the country. This compares with 38,806 two weeks previous, 68,502 four weeks previous, and 207,173 on August 4. The surplus is now smaller than at any time since November, 1907.

The production of pig iron in Germany, including Luxemburg, in September was 1,068,345 tons, which compares with 1,100,671 tons in the 31 days of August. In September, 1908, the total was 928,729 tons. From January to September, inclusive, the total output was 9,500,037 tons, as compared with 8,924,665 tons in the first nine months of 1908.

The half-way point in excavation for the Panama Canal, according to original estimates, has been reached in the past month, with a total of 87,494,537 cu. yd. removed since the United States took hold. The French took out 81,543,000 cu. yd. before the American acquisition.

NEWS OF THE WORKS.

Iron and Steel.

The Massillon Rolling Mill Company, Massillon, Ohio, is doubling the size and capacity of its plant by the erection of a building, 40 x 240 ft., to be used for general manufacturing purposes, and an addition to its boiler house, 40 x 48 ft. The company has awarded contracts for five new rolls, which are being built by the American Roll & Foundry Company, at Canton, Ohio, and a 25-ton electric crane, which is being built by the Alliance Machine Company, Alliance, Ohio. Orders for power equipment have also been placed.

The Struthers Furnace Company expects to blow in its new stack at Struthers, Ohio, late this week. An entirely new furnace has been built with a daily capacity of about 400 tons, which is about double that of the old stack. The furnace will run on basic iron.

General Machinery.

The Flint & Walling Mfg. Company, Kendallville, Ind., is erecting a new power plant, which will consist of a boiler and engine room, 70 x 90 ft., containing a 750-hp. Babcock & Wilcox boiler, Allis-Chalmers cross compound Corliss engine, and direct connected generator, water purifying plant, heaters and everything required to make up a modern and efficient plant.

The E. & B. Holmes Machinery Company, Buffalo, N. Y., manufacturer of cooperage machinery, &c., is building a two-story brick addition, 56 x 60 ft., to its plant, at Chicago and Miami streets.

The Star Corundum Wheel Company, Detroit, Mich., has acquired land adjoining its present factory upon which an addition will be erected at once.

The General Electric Company, Schenectady, N. Y., has received contract for transformers, switchboards and motors for the plant of the McKinnon Chain Company, now being built at Tonawanda, N. Y., for the manufacture of electric lap welded chain.

The Northwestern Steel & Iron Works, Eau Claire, Wis., has begun the erection of an addition to its plant, 50 x 150 ft., to accommodate the manufacture of concrete machinery. For the equipment of this plant the entire machinery installation of another manufacturing concern has been purchased. The new department will employ about 100 men.

The Sterling Engine Company, Buffalo, N. Y., has let contract to the Durolithic Company of that city for the erection of a two-story and basement addition, 70 x 120 ft., to its factory, at 1246-1250 Niagara street.

Contracts have been let for the new factory building to be erected by the Industrial Realty Company at Richmond, Ind., for the occupancy of the National Automatic Tool Company, Dayton, Ohio.

Modern tubular boilers with improved furnace setting are to be built at Portland, Ore., by the Ballin Water Tube Boiler Company, recently incorporated. For equipment details address Frederic A. Ballin.

C. R. Rogers & Co., Inc., Corry, Pa., recently completed for G. M. Shiffer, Emlenton, Pa., an addition consisting of a 25 x 100 ft. concrete and steel structure, to contain a 5-ton electric traveling crane and machine tools for the manufacture of gas engines of the oil country type and the general repairing of machinery. The building is absolutely fireproof, and the arrangement of the equipment is such that the greatest efficiency in operating will result.

The corporation of S. J. Stewart, Ltd., has been organized to take over the business of S. J. Stewart, New Orleans, La. The company will manufacture electrical equipment and do general machine work and its officers are: S. J. Stewart, president; S. A. Stewart, vice-president, and Samuel B. Stewart, secretary and treasurer.

The Taylor-Wilson Mfg. Company, Pittsburgh, is operating its plant at McKees Rocks day and night on pipe mill machinery. Among contracts are several from the Youngstown Sheet & Tube Company, Youngstown, Ohio, and the Republic Iron & Steel Company, for its pipe mills now being built at Hazelton, Ohio, consisting of motor driven pipe threading machinery with a capacity up to 6 in., motor driven tapping machines, &c. Work is also increasing operations in the casting and gear departments.

A one-story addition, 20 x 40 ft., is being made to the machine works of Fritz L. Mergenthaler, 118 Hollingsworth street, Baltimore, Md. The structure will cost about \$2500.

The Titusville Iron Company, Titusville, Pa., has recently added to its new power plant two 150-hp. horizontal return tubular boilers. This company is building many different varieties of boilers, and its tank and stack departments are busy on large orders. In its engine department gas engines for the oil fields and for general commercial purposes up to 2000 hp. each are being turned out.

Foundries.

The Fillmore Avenue Foundry & Iron Works, Buffalo, N. Y., contemplates extensive improvements and additions to its plant at Fillmore avenue and the Pennsylvania Railroad, which will

enable it to largely increase its present output and to take on a large amount of new business for which contracts are being entered into.

The Tuttle & Bailey Mfg. Company, Ltd., Bridgeburg, Ont., on the Niagara River opposite Buffalo, has been granted a charter by the Canadian Government to manufacture heating and ventilating apparatus; capital, \$40,000. Clifford H. Tuttle, James H. Bailey, Silas Tuttle and Robert Ketting are among the incorporators.

A foundry will be equipped at Walkertown, Ind., by the Indiana Radiator Company, recently organized, among the requirements being a cupola furnace to remelt scrap for sash-weights, which will be manufactured in addition to radiators.

The buildings of the Portland Foundry & Machine Company, Portland, Ind., are practically completed. The hammers are installed, and it is expected the plant will be ready for full operation December 1.

It is reported that E. P. Kern, Atlanta, Ga., acting for the Southern Iron & Equipment Company, of which he is president, will let contracts shortly for an iron and brass foundry.

Construction of a new foundry with modern equipment, including probably the installation of molding machines, is being planned by the Hollenbeck Mfg. Company, Holdrege, Neb.

The Marion Malleable Iron Works, Marion, Ind., is making additions and improvements that will double the capacity of the plant.

The Cyclops Foundry Company, Pittsburgh, has increased its capital stock from \$5000 to \$100,000. This is a new concern, recently organized, which proposes to build a foundry plant in the Pittsburgh District.

Power Plant Equipment.

Permission having been obtained from the United States Government, the Davenport Water Power Company, Davenport, Iowa, will soon start work on the construction of a water power canal for the generation of 16,000 hp., which will involve an outlay of \$2,000,000.

The Parker Boiler Company, Philadelphia, Pa., has received a third order from the Astoria Veneer Mills of Long Island City for two 346-hp. boilers, in addition to an order from the Pennsylvania Forge Company, Philadelphia, and one boiler of 104 hp.

Bridges and Buildings.

The American Bridge Company has received contract from the American Locomotive Company for the structural steel work for the new three-story brick and steel pattern shop to be built at the latter's Brooks Plant, Dunkirk, N. Y., in addition to the structural steel work for the combination tank and paint shop and the boiler shop, now under way.

The Rochester Bridge Company, Rochester, Ind., has been incorporated with \$30,000 capital stock, to manufacture and construct bridges. The directors are A. L. Deniston, W. B. Deniston, O. E. Nichols, O. B. Smith and Jerry Drudge.

The Vincent Mfg. Company has been incorporated at Indianapolis, Ind., to manufacture metal table slides. The directors are B. C. Vincent, E. A. Kahn, H. A. Kahn and R. A. Kahn.

Fires.

Fire on October 21 destroyed the Dayton Computing Scale Works, Pasteur Chamberland Filter Works, the Big Four freight depot and the Dayton Steam Boiler Works, at Dayton, Ohio. The total loss is estimated at \$500,000, largely covered by insurance.

Hardware.

The Stewart Iron Works Company, Cincinnati, Ohio, states that its new warehouses have just been completed and that the addition to its factory is nearly ready. These enlargements will increase the capacity about 33 1-3 per cent. and will put the company in a position where it will be better able to take care of the steadily increasing business with which it is being favored.

The Benedict Mfg. Company, maker of silver plated ware and metal goods, East Syracuse, N. Y., reports that it is now busier than at any other time in its history. Nearly 200 additional hands have been put on in the last month and each department is working on a night schedule. The company is represented by 22 salesmen in the United States and Canada.

The General Electric Company, Schenectady, N. Y., reports very gratifying sales of Tantalum lamps. The sales of this lamp are more than double what they were a year ago, and the lamp appears to be sharing with the demand for high efficiency lamps created by the introduction of Tungsten lamps. The Tantalum lamp, as at present supplied, is giving most excellent life service. Contrary to general belief, these lamps will give good commercial life on alternating current of 60 cycles or less. Their life on this frequency will average well above 600 hours. Nearly 2000 of these lamps were used on the United States war vessels recently in attendance at the Hudson-Fulton celebration in New York City.

Owing to its rapidly increasing business, the Waterloo Mfg. Company, Waterloo, Iowa, manufacturer of fire doors, steel ceilings and steel tanks, and jobber of plumbing and milling

supplies, is obliged to vacate its present location and seek larger quarters. The company is now seeking a site upon which to erect a new building, upon which it will begin construction as soon as the necessary site has been acquired. It expects to have room enough in the new location to extend the business from time to time as conditions warrant.

C. E. Stevens and J. H. Loughman of South Bend, Ind., will establish a factory for making an adjustable lamp bracket, the invention of Mr. Loughman.

Miscellaneous.

The city of Ashland, Kan., has voted bonds in the sum of \$30,000. Of the fund thus provided, \$20,000 is to be used for a water works system and the remaining \$10,000 for an electric light plant.

Contracts have been let by the Jackson Motor Car Company, Muscatine, Iowa, for the construction of a one-story garage, 60 x 112 ft., to be built of concrete blocks. The building will be heated by steam and will include a repair shop, for the equipment of which tools have already been purchased. There are yet to be supplied, however, steel bins for the storage of small parts and steel work benches and offices fixtures, the object being to make the plant as nearly fireproof as possible.

The firms of Hearsch & Wesson and the Perfection Fixture Company, Flint, Mich., which for a number of years have been operated by the same interests, have been consolidated under the title of Hearsch & Wesson Mfg. Company. It is stated that this action involves no changes in the conduct of the business nor the making of any plant improvements except such as might come in the regular way.

The Great Western Automobile Company, Peru, Ind., lately incorporated, has taken over the Model Automobile Company of that city and will continue to carry on the business of the latter company. The company recently erected and equipped a 500-ft. addition to its plant.

Preparations are being made by the Carter White Lead Company, Chicago, for the erection of an addition to its Omaha plant, which will add about 25 per cent. to its present capacity. Bids for the construction of this addition have been received and the work of building will be begun at once, with the expectation of completing the improvement within three months.

The Emerson Mfg. Company, Rockford, Ill., maker of agricultural implements, is building an addition to its plant, 80 x 740 ft., one-half of which will be three stories and the other half one story, of reinforced concrete construction.

The Salisbury Wheel & Mfg. Company, Jamestown, N. Y., has commenced the construction of a two-story, 50 x 82 ft., addition to its factory, at Falconer, N. Y.

The J. E. Bolles Wire & Iron Works, Detroit, Mich., is letting contracts for a reinforced concrete and structural steel addition to its factory, 1892 Joseph Campau avenue.

The Indiana Motor & Mfg. Company, recently incorporated, will build and equip a factory at Franklin, Ind., and will soon be in the market for boilers, motors and electric power equipment. The general offices are at 717 East Twenty-second street, Indianapolis. Chas. B. Riley is general manager.

The Westinghouse Storage Battery Company, with a capital of \$1,750,000, which was recently incorporated, is an amalgamation of the storage battery department of the Westinghouse Machine Company and the General Storage Battery Company. The officers of the company are: H. H. Westinghouse, president; E. M. Herr, vice-president; S. B. Dushinberre, vice-president and general manager; T. L. Brown, treasurer, and T. S. Grubbs, secretary.

The Keystone Sheet Metal Company, Economy, Pa., has booked the following contracts: For the St. Francis Hospital, Pittsburgh, all the doors and windows and ornamental copper work; Soldiers' Memorial Hall, Pittsburgh, skylights and cornice work; Standard Steel Car Company, Butler, Pa., skylights and cornice work, and the new Y. M. C. A., Chatham street, Pittsburgh, metal windows, cornice and skylights.

The plant of the Peru Electrical Mfg. Company, Peru, Ind., has been sold at receiver's sale to Charles H. Brownell of that city.

The Shredded Wheat Company, Niagara Falls, N. Y., has contracted with the Grain Storage Construction Company for the erection of a 100,000-bushel grain elevator of steel plate bin construction, in nine sections, 45 ft. in diameter, 80 ft. high, with an elevating and conveyor machinery building, 16 x 20 ft., 110 ft. high.

Babcock & Wilcox, Kasota, Minn., will install an electric crane. The erection of a modern shop, with heavy tools for stone cutting, planing and finishing, is being planned.

Two low pressure turbines to operate on a mixture of live and exhaust steam will probably be installed by the Hammond Lumber Company, Astoria, Ore.

The United States Headlight Company, Buffalo, N. Y., is doubling the size of its power house and enlarging the machine shop at its plant at Letchworth and Dart streets and the New York Central Railroad.

The Grasselli Chemical Company, Cleveland, Ohio, has taken an option on a farm near West Terre Haute, Ind., on which it may erect a plant to employ about 1500 men. The site is near

a pipe line from the Illinois oil fields. The company is a subsidiary of the General Chemical Company.

The John Cobb Chair Company has been organized at Shelbyville and will occupy the buildings recently vacated by the Eagle Range Company. The plant, now at Aurora, will be moved to the new location. The company is headed by Thomas J. Cobb.

The Commercial Club of Connersville, Ind., has raised a bonus of \$8000 and will give free taxes and free water for five years to the Lexington Motor Car Company, Lexington, Ky., to move its plant to the Indiana city. Plans are being drafted for the buildings.

An automatic engine or small Corliss unit will probably be needed by Copeland & Co., Plant City, Fla., for a mill which it is proposed to build.

The Bedford (Ind.) Power Company expects to begin work before spring on a hydro-electric development. Machinery specifications will be prepared at once.

A municipal power and lighting plant is under consideration by the authorities at King City, Mo.

New laboratory equipment for metallurgical work will be installed by Lehigh University, Bethlehem, Pa.

The new pumping station at Walters, Okla., will be built under the supervision of the O'Neal Construction Company, to whom inquiries concerning the machinery should be addressed.

The Keller Mfg. Company, Sauk Center, Minn., will be in the market shortly for boilers, engine, generator and other machinery for equipping a plant to replace the one which recently burned.

Plans for a pumping station and system of water distribution are being prepared for the city of Black River, N. Y.

The Blue Island Car & Equipment Company, Blue Island, Ill., will install a heavy duty Corliss engine unit in its power plant.

Power and saw mill apparatus will be required by the Central Lumber Company, Mansfield, La., for a new plant to be erected in that vicinity.

H. D. Chamberlain, Minneapolis, contemplates the erection of a plant at Hutchinson, Minn., in which to manufacture his road grader, including foundry and forge shop for the blading and iron parts.

The power plant and general machine shops of the Oliver Iron Mining Company, Hibbing, Minn., are to be practically rebuilt and modernized. Considerable new equipment will be needed.

An air compressor, tunneling machinery and concentrating plant will be installed this winter by the Iron Mask Mining Company, Carter, Mont.

The L. H. Prentice Company, Chicago, Ill., will add 10 or 12 direct current motors to its power equipment.

The Fremont Light & Power Company, Fremont, Ohio, will build a large hydraulic power plant at Belleville, on the Sandusky River. Plans have not yet, however, reached the point where the turbines and generators can be specified either as to type or capacities.

A Corliss engine and generator of 200 kw. will probably be added to the power plant equipment of the Bedford (Pa.) Electric Light, Heat & Power Company.

The Aztec Light & Power Company, Aztec, N. M., will be in the market this winter for power and electrical transmission machinery.

Arrangements are being completed at Mulhall, Okla., to provide an electric power plant, owned by the city.

Machinery for pumping water and sewage at Belvidere, Tenn., will be required within a few months if present plans are approved.

A. B. Avery, Prescott, Ark., will be in the market shortly for power machinery to be used in a new mill.

The project for a municipal lighting plant at Wellsburg, Iowa, has advanced to the stage where the equipment of the power house will be considered.

A hydraulic turbine and generator will be purchased in the near future by A. E. Reynolds, Pitkin, Colo., for a power plant to furnish current for operating mining properties in that vicinity which are under his management.

The Utica Gas & Electric Company, which installed a steam turbine generating plant in Utica, N. Y., about five years ago, is preparing to duplicate it on a much larger scale at Little Falls, N. Y.

A triplex high lift pump, with gasoline engine, will be purchased next week by the authorities at Belden, Neb.

The State Mfg. Company, Norfolk, Va., recently organized by J. F. Fawcett, expects to purchase some power equipment and woodworking tools in the near future.

A small rock crusher is required by the Portland Mining Company, Deadwood, S. D.

Purchase of equipment for a pumping station at Carroll, Neb., will be deferred until after January 1.

G. B. Merrill & Bros., Lake, Miss., will be in the market soon for an engine, refrigerating plant and other machinery to

replace apparatus ruined in a recent fire. Some woodworking tools will also be required.

A. S. Wright, Lewiston, Mont., is in the market for crushing rolls.

The Mansfield (Wash.) Water & Light Company has been incorporated for \$5000 and will be in the market for some machinery within two or three months.

The Titanium Alloy Company, Niagara Falls, N. Y., has completed plans for an extensive addition to its plant, which will permit of a large increase in the output.

A steam turbine power plant of 1000 kw. or upward is being planned by the Winchester & Washington City Railway, Winchester, Va., the probable location to be Millville. This project was brought up some months ago, but it appears to have lain dormant until recently.

A crushing plant, with breaker, elevator and screens, will be erected by E. W. Yeomans, Boise, Idaho, on property in which he is interested.

An addition costing \$10,000 is being built to the plant of the Indiana Brass & Iron Bed Company, at Mooresville, Ind., owned by Nusbaum & Joseph, Indianapolis. It will double the capacity of the plant.

The National Electrical Advertising Company has been incorporated at Evansville, Ind., with \$50,000 capital stock, to manufacture electrical advertising devices. The directors are J. A. McCoy, Jr., C. P. Schule and A. L. Swanson.

The Detroit Fuse & Mfg. Company, Detroit, Mich., has let contract for the erection of a two-story concrete factory building, 40 x 170 ft., at Rivard street and Piquette avenue.

The Smyth Garage Pan Mfg. Company has been incorporated at Belleport, N. Y., with a capital of \$15,000, to manufacture drip pans for garages and automobiles. Muir Smyth and Wm. G. Havens, Belleport, and Wm. J. Morton, Brook Haven, N. Y., are the incorporators.

Woodworking machinery and, possibly, engine, generator and electric motors, are to be purchased by the Stetson & Post Lumber Company, Seattle, Wash., for the factory which it will build to replace one that burned.

An alternating current generator of 500 kw. will be installed this winter by the Land & Power Company, Arkansas City, Kan., together with exciter, switchboard, &c. The prime mover will be a steam turbine.

The Kettle River Power Company, recently incorporated at Spokane, Wash., for \$500,000, has plans for an extensive hydro-electric development, the machinery requirements for which will be large.

The American Lead Company, 3112-14 Penn avenue, Pittsburgh, which recently commenced the manufacture of lead, tin and chemical pipe and lead specialties, is operating its various departments on contracts secured through sales representatives for its products, and is contemplating the installation of machinery for another line of lead goods, which it expects to produce about January 1.

The New Castle Forge & Bolt Company, New Castle, Pa., is operating nearly all departments to normal capacity. It has an order from the Ritter-Conley Mfg. Company, Pittsburgh, for several cars of sherardized bolts and has recently furnished the American Bridge Company, Pittsburgh, the same material in large quantities for use in the construction of structural towers for carrying high tension electric feed wires.

The recently organized Weber-Knapp Company of Jamestown, N. Y., has taken over the business of the Weber Mfg. Company of that city and will continue to manufacture its line of brass furniture trimmings, brass and aluminum castings to order and specialties in stamped steel and brass. The company is increasing its manufacturing facilities and additions to the present building are contemplated.

Several alternating current motors of larger capacity than are ordinarily used for industrial service will be purchased by the Cherry River Paper Company, Richwood, W. Va.

William Palmer, Jr., Rincon, N. M., will ask for bids shortly on a turbine or engine and generator for the power plant which he proposes building.

Air exhausters and other apparatus for vacuum cleaning will be manufactured at Rockford, Ill., by the Houston Mfg. Company, which is now providing the necessary factory equipment.

Dallastown, Pa., is considering the erection of a power plant for city pumping and lighting.

A centrifugal pump and gasoline engine, the unit to have a capacity of 500 gal. delivery of water per minute, is required by the Chicago Retort & Fire Brick Company, Ottawa, Ill.

Municipal electric generating plants are contemplated by the authorities at Belmont, S. D.; Pocahontas, Iowa, and Ackerman, Miss., and at each of these places power machinery will probably be purchased shortly after January 1.

The Lovell Mfg. Company, Erie, Pa., will install 15 to 20 induction motors for operating the machinery in its plant.

During the coming year considerable new equipment will be required by the Colorado Milling & Elevator Company, which

operates a large line of mills and elevators, including power set for a new plant at Burley, Colo. The company's headquarters are at Denver.

The German Steel Syndicate Participation.—The latest figures showing the participation in the German Steel Syndicate show some minor changes. As of October 1, 1909, the total is 6,183,498 metric tons for the so-called "A" products and 6,058,119 tons of the "B" products. The allotments of "A" products consist of 1,367,893 tons of billets, blooms, &c., 2,414,789 tons of rails and track material and 2,400,816 tons of shapes. The "B" products include 3,467,766 tons of bars, 730,658 tons of wire rods, 966,827 tons of plates, 141,339 tons of tubes and 637,196 tons of castings and forgings. The largest concern in tonnage is Phoenix, with a total allotment of 1,129,631 tons, of which 430,454 tons is in "A" products and 699,177 tons in "B" products, followed by Krupp, with 976,917 tons allotment, 526,827 tons being "A" products and 450,090 tons "B" products. The Deutscher Kaiser, of Thyssen & Co., is next, with a total of 974,325 tons, divided into 355,000 tons of "A" products and 619,325 tons of "B" products. Next in order is a group, each of which uses about 500,000 tons in allotments, which includes De Wendel & Co. with 622,000 tons, Gutehoffnungshütte with 585,999 tons, Rombach with 529,472 tons and Gelsen-Kirchen with 508,604 tons.

A New Carnegie Warehouse at Pittsburgh.—For some time the Carnegie Steel Company has maintained a fitting shop at its Thirty-third Street Mills in Pittsburgh and has been carrying a small stock of beams, channels, steel bars and other finished products to supply the small local trade. This warehouse will not interfere in any way with the plans of the company for the establishment of a very large warehouse on the site of the Star Tin Plate Mill on Twelfth street, which has been decided upon and which will be erected in the near future. In this new warehouse will be carried large stocks of plates, structural shapes, steel bars and other finished products made by the company, and it will be conducted much on the same lines as the large warehouse maintained by the same company at Waverly, N. J. It will prove a great convenience for contractors and jobbers, who will be able to obtain materials cut to length and in small quantities.

The Warner & Swasey Company, Cleveland, Ohio, has recently opened an office in Detroit, Mich., located in the new Ford Building. Thomas Farmer, who has for several years represented the company in the Detroit territory, will be manager of this office.

Arthur D. Little, Inc., Laboratory of Engineering Chemistry, Boston, Mass., has issued a copyrighted brochure, entitled "The Purchase of Coal," which treats of the method of buying coal on the basis of its value in British thermal units.

The Dominion Iron & Steel Company, Ltd., Sydney, Cape Breton, Canada, has awarded a contract to the Canada Foundry Company, Ltd., Toronto, Ont., for a new blast furnace, to have a daily capacity of about 350 tons.

The Rockford Machine & Shuttle Company, Rockford, Ill., manufacturer of machinery and tools, including sewing machine attachments and parts, has changed its name to the Rockford Lathe & Drill Company.

The third blast furnace of the Wharton Steel Company's group at Wharton, N. J., was scheduled to blow in October 26. Not since early October, 1907, have all three furnaces been in blast.

All the manufacturers of wire rope of the Rhenish-Westphalian District in Germany, with the exception of one, have formed a syndicate. Such an organization existed before, from 1900 to 1905.

The officers of the American Steel & Wire Company are making an inspection trip to the Eastern plants of the company this week.

The Iron and Metal Trades

Heavy Specifications and Large New Orders for Rolling Mill Products.

Continued Activity in Pig Iron.

To the trade the chief interest in the quarterly statement of the United States Steel Corporation lies in the report relating to the unfilled orders on hand on September 30, which show an increase of 740,000 tons over those of June 30. In view of the policy consistently followed since the break in prices, of making as few commitments as possible beyond the current year, this increase may seem large. It must be remembered, however, that the quarter in question has witnessed the booking of a large tonnage of steel rails for 1910. With the exception of contracts for bars for the agricultural implement makers, to run until the middle of 1910, the rail trade is the only branch of the industry in which long time engagements are made.

Buyers have not been given the usual opportunity during the prevalence of low prices to load up over long periods, nor have they had the chance during the rise which followed it.

Bookings continue heavy in the aggregate. As an instance, our Pittsburgh correspondent notes that during the week ending October 23, the Carnegie Steel Company entered specifications against contracts and booked new orders for sheets, plates, axles, car wheels and bar mill products aggregating 126,000 tons. This enormous tonnage does not include orders for rails, billets, sheet and tin plate bars and other semifinished products of the company.

Activity and strength in the pig iron markets continue. A leading cast iron pipe interest has purchased upward of 60,000 tons, the bulk from Virginia makers, Alabama furnaces taking the smaller part of the order. Additional iron was also secured in the Buffalo district. A large steel foundry interest in St. Louis has bought about 30,000 tons of basic pig iron, of which 15,000 tons went to central Ohio furnaces and 10,000 tons to Birmingham. Pittsburgh reports a sale of 20,000 tons of Bessemer for December and January delivery. In the East there is a good inquiry all along the line. The fact is noted that founders who have thus far called for only moderate tonnages are now in the market for much larger blocks, for delivery during the first quarter and the first half.

The steady progress in operating the sheet and tin plate mills nonunion is having its effect upon the situation in steel. The Columbus plant is being started, but there is still some uncertainty to what extent, if any, the independent sheet and tin plate mills will be able to secure bars for the first quarter.

Chicago reports sales of rails aggregating 80,000 tons, of which 68,000 tons went to one road. The New York Central order, which it is expected will amount to 235,000 to 250,000 tons, has not yet been placed. The Lehigh Valley, Central of New Jersey and Reading are now in the market. Car orders have been on a liberal scale.

Fabricators generally complain that the demand for structural steel has fallen off considerably and that the business is light. Chicago notes a fair run of work, but the impression is gaining ground that the advance in prices, which is now becoming effective on new work, is causing considerable hesitation.

The wire trade, which some weeks ago was rather quiet, is again showing animation, and buying is liberal. Makers are inclined to assume an attitude of reserve, being convinced that the spring trade will develop to very large proportions.

There is some talk of an advance in sheets, and some business for future delivery has been done at a somewhat higher range. The price of oil country goods has been advanced about \$2 per ton.

Lehigh and Schuylkill Valley furnacemen have bought a total of 300,000 tons additional Kirunavaara ores at 8½¢ per unit, ex-ship, Philadelphia. Some reservations of higher grade Lake Superior ores are being made at Cleveland.

The spelter market shows continued strength, the galvanizers being the principal purchasers.

A Comparison of Prices.

Advances Over the Previous Month in Heavy Type, Declines in Italics.

At date, one week, one month and one year previous.

Oct. 27, Oct. 20, Sept. 29, Oct. 28, 1909. 1909. 1909. 1908.

PIG IRON, Per Gross Ton :				
Foundry No. 2, standard, Philadelphia	\$19.00	\$18.75	\$18.50	\$18.75
Foundry No. 2, Southern, Cincinnati	17.75	18.25	17.75	15.75
Foundry No. 2, local, Chicago ..	19.00	19.00	19.00	16.85
Basic, delivered, eastern Pa.	19.00	18.50	18.50	16.00
Basic, Valley furnace	17.00	17.00	16.50	13.85
Bessemer, Pittsburgh	19.90	19.90	18.40	15.40
Gray forge, Pittsburgh	17.15	17.15	16.90	14.40
Lake Superior charcoal, Chicago ..	19.50	19.50	19.50	19.50

BILLETS, &c., Per Gross Ton :				
Bessemer billets, Pittsburgh ..	27.00	27.00	25.00	25.00
Forging billets, Pittsburgh ..	30.00	30.00	29.00	27.00
Open hearth billets, Philadelphia ..	28.60	28.60	27.60	26.20
Wire rods, Pittsburgh	32.00	32.00	31.50	33.00
Steel rails, heavy, at mill	28.00	28.00	28.00	28.00

OLD MATERIAL, Per Gross Ton :				
Steel rails, melting, Chicago ..	17.25	18.00	17.25	14.50
Steel rails, melting, Philadelphia ..	18.00	18.00	17.75	15.00
Iron rails, Chicago	20.50	20.50	20.50	18.00
Iron rails, Philadelphia	21.00	21.00	21.00	19.50
Car wheels, Chicago	18.25	18.25	18.50	15.25
Car wheels, Philadelphia	17.50	17.50	17.00	15.00
Heavy steel scrap, Pittsburgh ..	18.00	18.00	17.50	15.50
Heavy steel scrap, Chicago	16.00	16.50	16.75	14.00
Heavy steel scrap, Philadelphia ..	18.00	18.00	17.75	15.00

FINISHED IRON AND STEEL,				
Per Pound :	Cents.	Cents.	Cents.	Cents.
Refined iron bars, Philadelphia ..	1.60	1.60	1.57	1.45
Common iron bars, Chicago ..	1.55	1.55	1.55	1.50
Common iron bars, Pittsburgh ..	1.65	1.65	1.55	1.40
Steel bars, tidewater, New York ..	1.66	1.71	1.56	1.56
Steel bars, Pittsburgh	1.50	1.55	1.40	1.40
Tank plates, tidewater, New York ..	1.66	1.66	1.66	1.76
Tank plates, Pittsburgh	1.50	1.50	1.50	1.60
Beams, tidewater, New York ..	1.66	1.66	1.66	1.76
Beams, Pittsburgh	1.50	1.50	1.50	1.60
Angles, tidewater, New York ..	1.66	1.66	1.66	1.76
Angles, Pittsburgh	1.50	1.50	1.50	1.60
Skelp, grooved steel, Pittsburgh ..	1.45	1.45	1.40	1.45
Skelp, sheared steel, Pittsburgh ..	1.55	1.55	1.50	1.50

SHEETS, NAILS AND WIRE,				
Per Pound :	Cents.	Cents.	Cents.	Cents.
Sheets, black, No. 28, Pittsburgh ..	2.30	2.30	2.30	2.50
Wire nails, Pittsburgh	1.80	1.80	1.80	1.95
Cut nails, Pittsburgh	1.80	1.80	1.75	1.75
Barb wire, galv., Pittsburgh ..	2.10	2.10	2.10	2.40

METALS, Per Pound :				
Lake copper, New York	13.25	13.00	13.50	14.00
Electrolytic copper, New York ..	12.87½	12.75	13.00	13.50
Spelter, New York	6.30	6.25	5.85	4.85
Spelter, St. Louis	6.10	6.10	5.70	4.70
Lead, New York	4.40	4.40	4.38	4.35
Lead, St. Louis	4.25	4.25	4.25	4.20
Tin, New York	30.50	30.40	30.75	29.50
Antimony, Hallett, New York ..	8.25	8.25	8.30	8.00
Nickel, New York	45.00	45.00	45.00	45.00
Tin plate, 100 lb., New York ..	\$3.74	\$3.74	\$3.74	\$3.89

* These prices are for largest lots to jobbers.

Prices of Finished Iron and Steel F.O.B. Pittsburgh.

Freight rates from Pittsburgh in carloads, per 100 lb.: New York, 16c.; Philadelphia, 15c.; Boston, 18c.; Buffalo, 11c.; Cleveland, 10c.; Cincinnati, 15c.; Indianapolis, 17c.; Chicago, 18c.; St. Paul, 32c.; St. Louis, 22½¢; New Orleans, 30c.; Birmingham, Ala., 45c. Rates to the Pacific Coast are 80c. on plates, structural shapes and sheets, No. 11 and heavier; 85c. on sheets, Nos. 12 to 16; 95c. on sheets, No. 16 and lighter; 65c. on wrought pipe and boiler tubes.

Structural Shapes.—I-beams and channels, 3 to 15 in., inclusive, 1.50c., net; I-beams over 15 in., 1.60c., net; H-beams over 8 in., 1.70c.; angles, 3 to 6 in., inclusive, ¼ in. and up, 1.55c., net; angles, over 6 in., 1.60c., net; angles, 3 x 3 in. and up, less than ¼ in., 1.70c., base, half extras. steel bar card; tees, 3 in. and up, 1.60c., net; zees, 3 in. and up, 1.55c., net; angles, channels and tees, under 3 in., 1.45c., base, plus 10c., half extras, steel bar card; deck beams and bulb angles, 1.75c., net; hand rail tees, 2.75c., net; checkered and corrugated plates, 2.75c., net.

Plates.—Tank plates, ¾ in. thick, 6¼ in. up to 100 in. wide, 1.50c. to 1.60c., base. Extras over this price are as follows:

Tank, ship and bridge quality, ¼-in. thick on edges, 100 in. wide, down to but not including 6 in. wide, is taken as base.

Steel plates up to 72 in. wide, inclusive, ordered 10.2 lb. per square foot, shall be considered $\frac{3}{4}$ -in. plate. Steel plates over 72 in. wide must be ordered $\frac{3}{4}$ -in. thick on edge, or not less than 11 lb. per square foot, to take base price. Steel plates over 72 in. wide, ordered less than 11 lb. per square foot down to the weight of 3-16-in. shall take the place of 3-16-in.

Percentages as to overweight on plates, whether ordered to gauge or weight, to be governed by the Association of American Steel Manufacturers' Standard Specifications.

Gauges under $\frac{3}{4}$ -in. to and including 3-16-in. plates on thin edges.....	\$0.10
Gauges under 3-16-in. to and including No. 8.....	.15
Gauges under No. 8 to and including No. 9.....	.25
All sketches (excepting straight taper plates varying not more than 4 in. in width at ends, narrowest end being not less than 30 in.).....	.10
Complete circles.....	.20
Roller and flange steel plates.....	.10
"A. B. M. A." and ordinary firebox steel plates.....	.20
Still bottom steel.....	.30
Marine steel.....	.40
Locomotive firebox steel.....	.50
Shell grade of steel is abandoned.	
For widths over 100 in. up to 110 in.....	.05
For widths over 110 in. up to 115 in.....	.10
For widths over 115 in. up to 120 in.....	.15
For widths over 120 in. up to 125 in.....	.25
For widths over 125 in. up to 130 in.....	.50
For widths over 130 in.....	1.00

TERMS.—Net cash 30 days. Pacific Coast base, 1.30c. f.o.b. Pittsburgh.

Sheets.—Minimum prices for mill shipments on sheets in carload and larger lots, on which jobbers charge the usual advances for small lots from store, are as follows: Blue annealed sheets, Nos. 3 to 8, 1.65c.; Nos. 9 and 10, 1.70c.; Nos. 11 and 12, 1.75c.; Nos. 13 and 14, 1.80c.; Nos. 15 and 16, 1.90c.; box annealed sheets, Nos. 17 to 21, 2.10c.; Nos. 22 to 24, 2.15c.; Nos. 25 and 26, 2.20c.; No. 27, 2.25c.; No. 28, 2.30c.; No. 29, 2.35c.; No. 30, 2.45c.; galvanized sheets, Nos. 13 and 14, 2.35c.; Nos. 15 and 16, 2.45c.; Nos. 17 to 21, 2.60c.; Nos. 22 to 24, 2.75c.; Nos. 25 and 26, 2.95c.; No. 27, 3.15c.; No. 28, 3.35c.; No. 29, 3.45c.; No. 30, 3.70c. Painted roofing sheets, No. 28, \$1.60 per square. Galvanized roofing sheets, No. 28, \$2.85 per square for $2\frac{1}{2}$ -in. corrugations.

Wrought Pipe.—Discounts on steel pipe, $\frac{3}{4}$ to 6 in., in carloads to the largest trade, are 80 and 5 per cent. off list, and on iron pipe, $\frac{3}{4}$ to 6 in., are 75 and 5 per cent. off list.

Boiler Tubes.—Regular discounts, effective from October 1, 1909, on steel and charcoal iron boiler tubes, are as follows:

	Steel.	Iron.
1 to $1\frac{1}{2}$ in.....	.49	.43
$1\frac{1}{2}$ to $2\frac{1}{4}$ in.....	.61	.43
$2\frac{1}{4}$ in.....	.63	.48
$2\frac{1}{4}$ to 5 in.....	.69	.55
6 to 18 in.....	.61	.43
$2\frac{1}{4}$ in. and smaller, over 18 ft. long, 10 per cent. net extra.		
$2\frac{3}{4}$ in. and larger, over 22 ft. long, 10 per cent. net extra.		

Wire Rods.—Bessemer, open hearth and chain rods, \$32.

Steel Rivets.—Structural rivets, 2.05c., base; boiler rivets, 2.15c., base, subject to usual extras.

Chicago.

FISHER BUILDING, October 27, 1909.—(By Telegraph.)

None of the steel mills doing business in this market will quote open prices as yet on bars, structural shapes, plates or sheets for next year's delivery. Occasional contracts are taken running over the first half, but this business is done only as an accommodation to old customers, who have to sell their products in advance and desire to protect themselves on the cost of their material. The tonnage of this character which the mills are taking is not large, and there is a general disposition to discourage buying for next year. Back of this there appears to be a broad policy of discouraging speculative contracts with a long time to run. The mills in this district seem anxious to keep their capacity under their own control, not for the purpose of taking advantage of the market, but because they can take better care of the consumptive needs of all their customers if they avoid tying up on speculative contracts. In merchant pipe this policy has gone so far that orders are only taken subject to specifications within 30 days, and in wire products specifications are required within 60 days. Reports recently circulated that sales of wire products for next year's delivery are being made at an advance of \$2 are not confirmed, but have grown out of an exception to this policy. Occasionally buyers engaged in manufacturing desire contracts running into next year to protect them, and a few isolated cases of this character have given rise to the report noted, but these cases have no relation to present market prices. There have been no changes in nominal quotations here of bars and other rolled products, but a buyer who wishes prompt shipment has difficulty in finding a mill that will take the business, and he has to pay a premium over the regular price. On most lines the tonnage booked will carry the mills in this district well through the first quarter, but new buying continues each week, and was a little larger in volume last week than in the weeks preceding. Standard rail orders, as noted elsewhere, amounted to 80,000 tons from Western roads. Railroad orders for bar iron in 500- and 1000-ton lots are becoming frequent and have eliminated the weakness which formerly appeared in quota-

tions for iron bars. Altogether the market is very strong for all rolled products.

Pig Iron.—There have been many sales of small lots, with a few orders of 1000 tons each, and this current business makes a fair aggregate for the week, but there have been no large inquiries or sales, and buyers are not showing much interest in business for the second quarter or additional supplies to run through the first half. Reports come from St. Louis of the sale there of 20,000 tons of basic to a foundry interest, from Southern and Ohio furnaces. This was in addition to that sold the week before to the same interests. A local inquiry here from a large foundry interest which has been pending several weeks has been revised several times and has resulted in nothing more thus far than the sale of 2500 tons of high silicon iron which was reported last week. The market has held very strong through a comparatively quiet week, and another buying movement is expected as soon as melters are able to make a little more definite estimate of their requirements for the first half. The regular price for No. 2 Southern continues at \$15, Birmingham, for the first half. Occasional lots of spot or resale Southern iron are available at a shade under the regular quotation, but these are usually spot cash transactions. Northern iron is strong and current business is a little larger in volume than in Southern grades. The Southern Ohio furnaces have dropped out of this market, as the price they now ask would make No. 2 foundry cost over \$20, delivered here. Prices of all grades, both Northern and Southern, are practically unchanged. Spring Valley Furnace will be in blast November 5. The following quotations are for October, November and December delivery, f.o.b. Chicago:

Lake Superior charcoal.....	\$19.50 to \$20.00
Northern coke foundry, No. 1.....	19.50 to 20.00
Northern coke foundry, No. 2.....	19.00 to 19.50
Northern coke foundry, No. 3.....	18.50 to 19.00
Northern Scotch, No. 1.....	19.00 to 19.50
Southern coke, No. 1.....	19.85 to 20.35
Southern coke, No. 2.....	19.35 to 19.85
Southern coke, No. 3.....	18.85 to 19.35
Southern coke, No. 4.....	18.35 to 18.85
Southern coke, No. 1 soft.....	19.85 to 20.35
Southern coke, No. 2 soft.....	19.35 to 19.85
Southern gray forge.....	17.85 to 18.35
Southern mottled.....	17.60 to 18.10
Malleable Bessemer.....	18.50 to 19.00
Standard Bessemer.....	20.90 to 21.40
Jackson Co. and Kentucky silvery, 6%.....	20.40 to 20.90
Jackson Co. and Kentucky silvery, 8%.....	21.40 to 21.90
Jackson Co. and Kentucky silvery, 10%.....	22.40 to 22.90

(By Mail.)

Billets.—Buyers of billets in this market are dependent upon occasional lots that are available at Eastern mills, as none of the local mills will make quotations or accept contracts under present conditions.

Rails and Track Supplies.—Orders for 80,000 tons of standard rails were booked here by the leading interest last week. One road took 68,000 tons, but names of buyers are withheld. The current demand for light rails was better than in recent weeks, and made a good aggregate. The demand for prompt shipment of rail fastenings and track supplies is very urgent, and the mills have difficulty in satisfying the requirements of the railroads. Only the main lines of the railroads were kept up to the usual standard during the past two years, and now that the revival of traffic affords them the revenue, all the labor that can be obtained for the work is employed in track repairs, making very heavy demands on the mills for material. We quote standard railroad spikes at 1.80c., base; track bolts and square nuts, 2.25c. to 2.50c., base, all in car lots, Chicago. Light rails, 40 to 45 lb., \$28; 30 to 35 lb., \$26.75; 16, 20 and 25 lb., \$27; 12 lb., \$28, Chicago, less 50c. a ton on lots of 500 tons and \$1 a ton on lots over 500 tons.

Structural Material.—A good tonnage of structural and fabricating contracts came out last week. The American Bridge Company booked 1600 tons for power development of the Idaho-Oregon Power Company at Oxbow, Ore., 1800 tons for additional construction at the Superior ore docks of the Chicago & Northwestern, 2000 tons for a Southern Pacific bridge over the American River, near Sacramento, Cal.; 500 tons for a building for the Mammoth smelter at Kennett, Cal.; 400 tons for the Chamber of Commerce Building, Portland, Ore.; 137 tons for a power house at Oakland, Cal., and other smaller lettings. This interest also took orders for 1200 tons of car axles, making 13,000 tons of this work taken during this year. Other important lettings of the week were 800 tons to the Ralston Iron Works, San Francisco, by the Harbor Commissioners of that city for pier No. 34; 222 tons to Dyer Brothers at San Francisco for the Leland Stanford chapel at Palo Alto, Cal. (Stanford University); 440 tons for a power house at Riverton, Kan., let to a Joplin, Mo., firm. Considerable new business is in prospect. A contract for 800 tons for a new baseball park in Chicago is pending, and may be let at any time. The Pennsylvania project for a new union depot in Chicago is actually assuming tangible form. For the St. Louis free bridge across the Mississippi, which will require over

30,000 tons, the plans now under consideration contemplate the use of nickel steel for about half the total tonnage. The current demand for structural material for small projects shows no signs of slackening with the approach of winter, and the mills have little prospect of catching up with specifications. We quote plain material from mill 1.68c. to 1.78c., Chicago; from store, 1.90c., Chicago.

Sheets.—The sheet mills in this district are booked so far ahead that they endeavor to discourage new orders, in some cases asking a premium over the current price merely to avoid taking more business until they can work out some of that under contract. We quote store prices on a basis of 2.85c. to 2.95c. for No. 28 black, and 3.90c. to 4c. for No. 28 galvanized.

Plates.—The record breaking traffic which the railroads are handling is bringing out a large aggregate of car orders this week, thus adding to the congestion that prevails in the plate mills. This difficulty will probably increase rather than diminish during the winter, as the country is confronted by a very severe car shortage, which will force large additional orders for equipment. The universal plate mills have enough booked to run them for months, but the sheared plate mills are better able to keep up with the demand and are only about 60 days behind on deliveries. We quote mill prices at 1.68c. to 1.78c., Chicago; store prices, 1.90c., Chicago.

Bars.—There is a little more pressure each week from buyers who wish to make contracts for next year's delivery, but thus far the leading mills have withstood the pressure and have booked such business only where it was necessary to accommodate old customers, who desire to protect themselves on the trade in their own products. On bars and other important products the mills have now almost enough business booked to carry them through the first quarter, and a moderate volume of buying from now on would cover their capacity for the first half. The current demand is increasing and is adding to the difficulties of the mills. The bar iron mills are getting a larger share of the business than formerly and are now booked four to six weeks ahead, on increased buying by railroads and by consumers who can use either iron or steel. The only mills which can make prompt deliveries of steel have no difficulty in getting \$2 over the regular price. We quote steel bars at 1.58c. to 1.68c.; bar iron, 1.55c. to 1.60c.; hard steel bars, rolled from old rails, 1.50c. to 1.55c., all Chicago.

Merchant Pipe.—The general activity in building through the West is reflected in orders from the jobbing trade. A modern hotel or office building requires a surprisingly large tonnage of pipe, and in all of the important towns and cities of the West there are many building projects under way, which add to the demand on the pipe mills. The merchant pipe trade is peculiarly free from speculative buying, as jobbers limit their orders to 30 days' requirements; hence the jobbing demand is a very accurate index of business conditions. Prices are unchanged.

Boiler Tubes.—Many of the leading railroads find themselves short of motive power, and this has stimulated shop repair work and made a somewhat increased demand for boiler tubes. There is also a larger demand from boiler makers to meet the requirements of new factory construction and improvements.

Cast Iron Pipe.—The municipal demand is slackening in anticipation of the winter season, but there are several lettings pending, which call for a respectable tonnage of water pipe. One at Valentine, Neb., to be let this week, calls for about 400 tons, and others are in prospect. The only important lettings last week were at Kansas City, and Columbus, Ohio, each of about 200 tons. We quote per net ton, Chicago, as follows: Water pipe, 4-in., \$28.50; 6 to 12 in., \$27.50; 16-in. and up, \$26.50, with \$1 extra for gas pipe.

Metals.—The remarkable advance in spelter and sheet zinc is the feature of the market this week. It was thought at first that the early advance was due merely to the mine operators holding back ore for better prices, but the latest advance is so firmly maintained that it is believed in jobbing circles there is more or less of a speculative feature connected with it. There is no scarcity of spelter, as it can be had for prompt shipment in almost any quantity, but the price is firm at 6.30c. to 6.40c., with sheet zinc at \$8. There is little movement in other metals. We quote as follows: Casting copper, 13c.; lake, 13½c., in carloads, for prompt shipment; small lots, ¼c. to ¾c. higher; pig tin, car lots, 31½c.; small lots, 33c.; lead, desilverized, 4.45c. to 4.55c., for 50-ton lots; corroding, 4.70c. to 4.80c., for 50-ton lots; in carloads, 2½c. per 100 lb. higher; spelter, 6.30c. to 6.40c.; Cookson's antimony, 10½c., and other grades, 9½c. to 10½c.; sheet zinc is \$8, f.o.b. La Salle, in car lots of 600-lb. casks. On old metals we quote: Copper wire, crucible shapes, 13½c.; copper bottoms, 11½c.; copper clips, 12½c.; red brass, 12c.; yellow brass, 9½c.; light brass, 6½c.; lead pipe, 4½c.; zinc, 5c.; pewter, No. 1, 23c.; tin foil, 25c.; block tin pipe, 27c.

Old Material.—A break in the value of steel scrap in the past week has proved quite a surprise to dealers who had

anticipated a larger demand for it. A considerable tonnage has been sold around \$16, but dealers who are in position to hold their stock are demanding higher prices. Rolling mill material is a little easier, but consumers buy liberally on the soft spots in the market. The unusual demand for short steel rails has spent its force, and they are now quoted lower. Car axles are scarce and in good demand, and there is urgent inquiry for borings and turnings, as well as No. 1 busheling scrap. The Omaha and the Burlington railroads offer lists comprising a good tonnage of railroad material on which bids will close this week. The following prices are per gross ton, f.o.b. Chicago:

Old iron rails.....	\$21.00 to \$21.50
Old steel rails, rerolling.....	18.00 to 18.50
Old steel rails, less than 3 ft.....	17.25 to 17.75
Relaying rails, standard sections, subject to inspection.....	23.50 to 24.50
Old car wheels.....	18.25 to 18.75
Heavy melting steel scrap.....	16.00 to 16.50
Frogs, switches and guards, cut apart.....	16.25 to 16.75
Shoveling steel.....	15.50 to 16.00

The following quotations are per net ton:

Iron angles and splice bars.....	\$18.00 to \$18.50
Iron car axles.....	21.50 to 22.00
Steel car axles.....	20.50 to 21.00
No. 1 railroad wrought.....	15.75 to 16.25
No. 2 railroad wrought.....	15.00 to 15.50
Springs, knuckles and couplers.....	15.50 to 16.00
Locomotive tires, smooth.....	17.00 to 17.50
No. 1 dealers' forge.....	13.50 to 14.00
Steel axle turnings.....	11.75 to 12.25
Machine shop turnings.....	11.00 to 11.50
Cast and mixed borings.....	7.50 to 8.00
No. 1 busheling.....	13.75 to 14.25
No. 2 busheling.....	10.25 to 10.75
No. 1 boilers, cut to sheets and rings.....	11.50 to 12.00
No. 1 cast scrap.....	15.25 to 15.75
Stove plate and light cast scrap.....	13.00 to 13.50
Railroad malleable.....	15.25 to 15.75
Agricultural malleable.....	13.50 to 14.00
Pipes and flues.....	12.00 to 12.50

Philadelphia.

PHILADELPHIA, PA., October 26, 1909.

The situation in the local iron and steel market continues very strong. In some grades of crude materials buying has been somewhat less pronounced, although prices show a slight advance. Finished materials have been a trifle more active; heavy orders for rolling stock coming from the railroads have brought out some good purchases of plates and shapes, and mills are operating very close to top capacity. Some mills are now accepting moderate orders for first quarter delivery, but in most cases at an advance in price over that for which orders for this year will be taken. Pig iron producers in the East are in a very strong position; furnace coke is still scarce and high prices are asked for next year's delivery. A number of pig iron producers are making contracts for next year's ore supply, the most important transaction recently being a sale made last week to several Schuylkill Valley furnaces of an aggregate of 300,000 tons of Kirunavaara ore (Swedish) for importation during 1910, the price being 8½c. per unit, delivered Philadelphia, while negotiations for another 100,000 tons are pending. Importations of foreign ore at this port so far during the present month aggregate about 85,000 tons, and it is believed that the total for October will be close to 100,000 tons.

Pig Iron.—The most important transaction has been the purchase of a large portion of the 6000 tons of low phosphorus iron recently asked for by an Eastern melter, for delivery during 1910, beginning April 1. While details of the transaction are not available, the price is believed to be close to \$22.50, delivered. While foreign was being considered by the purchaser, it is understood that domestic iron only was bought. Some smaller sales of low phosphorus iron for early 1910 shipment are reported, but the bulk of the business has been for delivery outside of this territory at prices which, had the iron been delivered here, would range close to \$22.50, delivered. Foreign iron of this grade has been pretty freely offered, but we learn of no sales. The basic iron situation has developed further strength. The unexpected blowing out of one of the Schuylkill Valley furnaces, making basic iron, will shorten the available production, but will not, it is believed, seriously affect melters. A considerable tonnage is being inquired for, largely for first quarter shipment, for which period several consumers have not yet fully covered. Prices are somewhat higher, and, while one lot of 5000 tons was sold for early 1910 shipment at \$18.75, delivered, practically every seller now holds firmly at \$19, and some, who are pretty well sold up, are not willing to accept further orders at that figure. The foundry iron situation is unchanged; buying continues mainly in small lots, and, while prices have not really advanced, those who heretofore have been selling No. 2 X foundry at \$18.75, delivered, have taken all the orders they care for at that basis, and have moved their price up about 25 cents a ton, to a level which the majority of sellers have held for that grade for several weeks. Sales, running from carloads for prompt shipment to moderate sized lots for delivery during the remainder of

this and first quarter of next year, have been quite freely made at \$19 to \$19.50, delivered, for standard eastern Pennsylvania brands of No. 2 X foundry. For further extended delivery, for which there has been some scattered inquiry, sellers are not anxious to quote, although some might be induced to sell for second quarter delivery at an advance of 50 cents a ton above the present high level. The bulk of the foundry iron sales has been of No. 2 X and No. 2 plain grades, although it is reported that quite extensive purchases of low grade foundry iron have been made by some of the cast iron pipe interests. Virginia foundry irons have shown a little more activity, sales of several round lots being reported, for delivery during December, January and February, at \$16.25, at furnace, for No. 2 X, equal to \$19.25 delivered here. The range of the market, however, is still \$16 to \$16.50, at furnace, for No. 2 X, the price being dependent upon customer and quantity. Outside of the leading interests, the majority of the Virginia producers are well sold up as far as iron for this year's delivery is concerned. There has been but little business transacted here in Southern foundry; at the present prices melters of the higher grades are not interested, as local irons can generally be secured at prices under those at which Southern iron is held. There appears to be a somewhat larger supply of forge iron available, which holds the price for this grade on a fairly even basis. Some sellers still quote prohibitive prices, although business has been transacted at \$17.50 to \$17.75, delivered, one sale of 3000 tons, for mill purposes, being reported at the outside price, for delivery during the first six months of next year. Sellers' position in the East is very strong and the market shows a healthy undertone. The Eastern Pig Iron Association, at its meeting in this city last week, noted an even volume of business as far as orders on the various furnace books were concerned, while a decrease in the stocks of iron on the furnace books was reported. Many producers are well sold up for delivery during this year and the first quarter of 1910, and are inclined to go slowly on business for more extended delivery. For delivery in buyers' yards, eastern Pennsylvania and nearby points, we quote the following range of prices, for shipment during the remainder of this and the first quarter of next year:

Eastern Pennsylvania, No. 2 X foundry.	\$19.00 to \$19.50
Eastern Pennsylvania, No. 2 plain.	18.50 to 19.00
Virginia, No. 2 X foundry.	19.00 to 19.50
Virginia, No. 2 plain.	18.50 to 19.00
Gray forge.	17.50 to 17.75
Basic.	19.00
Low phosphorus.	22.50

Ferromanganese.—The demand in this vicinity has been rather quiet. Some little business for Western shipment has, however, been before the trade. Prices appear to be somewhat firmer, and several sellers have advanced quotations, which, however, in the absence of business, are somewhat nominal at \$44 to \$45, Baltimore.

Billets.—A fairly good volume of business is coming out. Mills, however, are pretty well sold up for this year's delivery. Order books for early 1910 delivery have been opened in a conservative way, and some little business in ordinary rolling steel, at prices equal to \$29.60, delivered in this vicinity, has been taken for first quarter shipment. For this year's shipment, however, orders for ordinary steel are still accepted at \$28.60, delivered here. Forging billets are in good demand, prices for ordinary grades ranging from \$32 to \$33, Eastern mill, the usual extras applying for high carbons and special sizes.

Plates.—The general demand is better, with heavy inquiries from car builders. Business comes out quite freely, and in some instances mills are not in a position to accept tonnage for this year's shipment. Order books for the first quarter of 1910 have been opened in a moderate way, business for such delivery being accepted at prices ranging from 1.75c. to 1.80c., delivered here. For delivery during the next 60 days, however, orders are still being taken at 1.65c. to 1.75c., dependent on quantity and specification. Mills still refuse to make contracts for extended deliveries.

Structural Material.—There has been an increased demand, particularly for shapes for steel car work. A slightly larger volume of miscellaneous business is also reported, and mills in this district are fully engaged. Several small building propositions are under consideration, while that for the Fidelity Building, in Baltimore, requiring some 3000 tons, which was recently bid upon, will, it is reported, be reopened. Delayed deliveries on some classes of shapes are reported to be hardening. Prices are firm, plain material being quoted at prices ranging from 1.65c. to 1.75c., dependent on specification, delivery in this territory. Mills still refuse to contract for extended delivery, although orders beginning at an early date and extending into the early part of next year are accepted.

Sheets.—Local mills are actively engaged. Orders come out quite freely, but makers refuse to accept business extending beyond the year end. Spot sheets still command a premium, as do also those on which delivery beyond 30 days is specified. Inquiries from the West are increasing and quite a little business has been booked by Eastern mills

for such delivery. Prices are very firm. For reasonably prompt delivery in this territory the following quotations are named: Nos. 18 to 20, 2.50c.; Nos. 22 to 24, 2.60c.; Nos. 25 and 26, 2.70c.; No. 27, 2.80c.; No. 28, 2.90c.

Bars.—There has been an active demand both for iron and steel bars. The latter, however, are scarce, and some mills are filled up on leading sizes for months ahead. Refined iron bars, for prompt shipment, are in good demand, and mills are fairly well engaged. Prices still show a considerable range, due to conditions of sellers' order books as well as the nature of the inquiry. For reasonably early delivery refined iron bars are quoted from 1.60c. to 1.70c., delivered in this territory, although the base price may be shaded if the extras are attractive. Steel bars are quoted at 1.65c., delivered, although few mills can make satisfactory shipments.

Coke.—Prompt coke in any quantity is scarce, while sellers hold forward deliveries at what buyers consider too high prices; hence little business of importance is transacted. Furnace coke for this year's shipment ranges from \$2.85 to \$3, per net ton, at oven, with slightly higher prices prevailing for early 1910 delivery. Foundry coke for prompt delivery ranges from \$2.75 to \$3, at oven, with as high as \$3.50 named for forward deliveries. For delivery in this vicinity during the balance of the year, the following quotations are named:

Connellsville furnace coke.	\$5.00 to \$5.25
Foundry coke.	5.10 to 5.25
Mountain furnace coke.	4.65 to 4.85
Foundry coke.	4.70 to 4.85

Old Material.—The market continues strong, but has a somewhat easier appearance, particularly as regards heavy steel melting scrap. The arrival of foreign steel scrap, for the associated steel mills, has relieved the shortage at some plants, and enabled the buyer to divert tonnage to other mills, so that practically all of the mills are now in a somewhat easier position as to their supply. Wrought iron scrap continues active, as does also machinery cast. Transactions, however, have been on a rather small scale, and the market may be termed somewhat inactive but firm. Prices are practically unchanged, the following range, while to some extent nominal, being named for early delivery in buyers' yards, eastern Pennsylvania and nearby points:

No. 1 steel scrap and crops.	\$18.00 to \$18.50
Old steel rails, rerolling.	19.25 to 19.75
Low phosphorus.	22.00 to 22.50
Old steel axles.	24.00 to 25.00
Old iron axles.	29.00 to 30.00
Old iron rails.	21.00 to 22.00
Old car wheels.	17.50 to 18.00
Choice No. 1 R. R. wrought.	21.00 to 22.00
Machinery cast.	17.00 to 18.00
Railroad malleable.	17.00 to 17.50
Wrought iron pipe.	17.25 to 17.75
No. 1 forge fire scrap.	16.50 to 17.00
No. 2 light iron.	10.00 to 10.50
Wrought turnings.	15.75 to 16.25
Stove plate.	14.00 to 15.00
Cast borings.	13.50 to 14.00
Grate bars.	14.50 to 15.00

Birmingham.

BIRMINGHAM, ALA., October 25, 1909.

Pig Iron.—Sales of several 1000-ton lots have been recorded the past week, the prevailing base price being \$15, f.o.b. cars at the furnace. In addition to these, several sales were made involving smaller quantities. While two or three of the largest producers have opened their books for business, including the second half of 1910, apart from first quarter, others cling to the idea that they should have first quarter business in connection with the second quarter, hence are unwilling to sell only in that way. It is thought, however, that this policy would be deviated from should an old and esteemed customer insist on second quarter booking independent of his supply for the first quarter, which has already been purchased. The tendency the past week has been to crystallize the \$15 base price as applying to prompt as well as next year's delivery; and this is the case as far as the producers are concerned. Small lots sold at some concession are heard of, but this is merchant iron. The supply of resale iron in the Birmingham District is being materially decreased, according to figures recently compiled. The local foundry trade is considered exceptionally good and the melt is large. Sales indicate that the large melters in the Middle West are doing a splendid business, and while production has been somewhat increased there is no evidence of surplus iron being piled on the yards of furnace companies. Indeed, the only drawback in the movement of iron already booked is the acute shortage in car supply. The railroad companies are alive to the possible grave situation along this line, and are straining every point to prevent it.

Cast Iron Pipe.—Municipalities in different sections of the country, particularly the West and the far West, are offering their specifications. Some contemplate entirely new pipe lines, while others are preparing for extensive improvement work. Manufacturers claim to be enjoying trade sufficient to keep them running full time, with prospects

ahead for substantial business far into next year. The stability of the iron market will largely govern their future actions. Prices are firm, with an upward tendency. We quote water pipe as follows, per net ton, f.o.b. cars here: 4 to 6 in., \$26; 8 to 12 in., \$25; over 12 in., average \$24, with \$1 per ton extra for gas pipe.

Old Material.—The scrap iron market continues active, and prices are well maintained. The recent high level, however, in heavy steel scrap does not obtain at present. Melters of this kind of scrap seem to have supplied their wants to a great extent. Inquiries from scrap-using centers hold up comparatively well. Cast scrap of all kinds seems to take precedence over other grades, and it is much sought, especially No. 1 machinery. Dealers are quoting as follows:

Old iron rails.....	\$17.50 to \$18.00
Old iron axles.....	20.00 to 20.50
Old steel axles.....	18.00 to 18.50
No. 1 railroad wrought.....	14.00 to 14.50
No. 2 railroad wrought.....	12.50 to 13.00
No. 1 country.....	12.00 to 12.50
No. 2 country.....	11.50 to 12.00
No. 1 machinery.....	12.50 to 13.00
No. 1 steel.....	12.50 to 13.00
Tram car wheels.....	12.00 to 12.50
Standard car wheels.....	14.00 to 14.50
Light cast and stove plate.....	10.00 to 10.50
Cast borings.....	6.50 to 7.00

The Chattanooga Furnace of the Southern Iron & Steel Company, Chattanooga, Tenn., will be blown in on foundry iron this week.

St. Louis.

St. Louis, October 25, 1909.

A marked feature of the situation is the steady increase on the part of Southwestern railroads in making purchases, which furnish business to steel-making interests. The manufacturers of agricultural implements are sharing in the prosperity of farmers. The demand for both pig iron and coke is increasing. The contract for the steel for the free bridge (amounting to over \$2,000,000) will be let before the end of the year, and a very large quantity of steel will also be required for the new Municipal Courts Building.

Coke.—Increase in inquiry, a stronger feeling and further difficulty in placing orders are quite generally reported in this market. Specifications for contract coke are being freely furnished, and in some instances time of shipment anticipated. Some brokers handling Connellsville coke state that prices, except for prompt shipment, have been withdrawn. While no large sales or inquiries are mentioned, all the leading houses state that the demand is very good. Quotations for standard brands of 72-hr. foundry are named as \$3.25 to \$3.40 for shipment over the balance of the year, and \$3.25 to \$3.50 for shipment over the first half of 1910, per net ton, f.o.b. oven, Connellsville.

Pig Iron.—The principal features of the pig iron market for the past week are the following: Continued offerings of resale foundry iron, with a good general demand and large purchases of basic. The local representative of a Birmingham interest states that since October 7 his sales of foundry iron foot up over 12,000 tons, and that the month will prove to be the best since the St. Louis branch was opened. Most of these sales are for shipment over the first half of 1910, and on the basis of \$15, Birmingham. A leading broker reports the sale of 10,000 tons of Southern basic iron to a local steel foundry for shipment over the first quarter of 1910; also the sale of nearly 6000 tons of other iron (principally Virginia iron) to various parties for shipment over the first quarter and first half. It is reported that the local steel foundry closed a contract for 15,000 tons of Southern Ohio basic, but in other offices it is claimed that the inquiry for 15,000 tons is still pending. Resale iron is offered at \$14.50 in 100-ton lots, conditioned on immediate shipment only. Most of the business done has been in Southern foundry for shipment over the first quarter and half of 1910. The price at which Southern No. 2 foundry has been held is on the basis of \$15, Birmingham, for delivery over the first quarter or first half, with a premium of 50 cents per ton being occasionally secured for some special brand for prompt shipment.

Finished Iron and Steel.—The demand from fabricators in St. Louis territory is excellent, as structural steel is wanted in many of the neighboring cities. The inquiry for standard rails is improving, but light rails are neglected. Business in bar iron and steel is taxing the facilities of the leading interest. The call for all kinds of track material is most urgent.

Old Material.—The demand for scrap iron and steel is less urgent, particularly in the case of steel, and there is some irregularity in prices; some items in the list are slightly higher, while in others there is some recession. There are no railroad offerings reported. We quote dealers' prices as follows, per gross ton, f.o.b. St. Louis:

Old iron rails.....	\$17.50 to \$18.00
Old steel rails, rerolling.....	16.50 to 17.00
Old steel rails, less than 3 ft.....	18.00 to 18.50
Relaying rails, standard sections, subject to inspection.....	25.00 to 25.50
Old car wheels.....	17.50 to 18.00
Heavy melting steel scrap.....	16.00 to 16.50
Frogs, switches and guards, cut apart.....	18.00 to 18.50

The following quotations are per net ton:

Iron fish plates.....	\$15.00 to \$15.50
Iron car axles.....	21.00 to 21.50
No. 1 railroad wrought.....	16.00 to 16.50
No. 2 railroad wrought.....	15.00 to 15.50
Railway springs.....	14.00 to 14.50
Locomotive tires, smooth.....	16.00 to 17.00
No. 1 dealers' forge.....	11.50 to 12.00
Mixed borings.....	18.00 to 18.50
No. 1 boilers, cut to sheets and rings.....	11.50 to 12.00
No. 1 cast scrap.....	14.50 to 15.00
Stove plate and light cast scrap.....	10.75 to 11.25
Railroad malleable.....	14.00 to 14.50
Agricultural malleable.....	12.00 to 12.50
Pipes and flues.....	11.75 to 12.25
Railroad sheet and tank scrap.....	10.50 to 11.00
Railroad grate bars.....	12.00 to 12.50
Machine shop turnings.....	10.50 to 11.00

Lead, Spelter, &c.—Lead is dull and unchanged at 4.25c., East St. Louis. Spelter is active and higher, at 6.27½c. to 6.30c. Zinc ore stronger at \$49 to \$50 per ton, Joplin base. Tin is 10c. per 100 lb. lower; antimony unchanged; copper weaker. The demand for finished metals is fairly good.

The Commonwealth Steel Foundry will enlarge its plant at Granite City, Ill., by the erection of two new buildings. The cost of the improvement will be about \$30,000. Ground has been broken for the first building. The working force has been increased from 2000 to 3000 men. Several orders have been booked for far forward delivery.

The Mississippi Valley Bridge Company, general contractor for the piers of the free bridge, will build five barges to take material to the site of the piers.

Buffalo.

BUFFALO, N. Y., October 25, 1909.

Pig Iron.—Quieter conditions prevail than during the fore part of the month, many large consumers having covered their requirements for the remainder of the year and in some instances for the first quarter. While there is less activity in buying, a good solid volume of small orders has been coming in daily, with several sales of notable size, making a fairly heavy total for the week, principally foundry and malleable, and for first quarter delivery. Railroad shops in this district are becoming very much busier and there is quite a marked increase in malleable consumption on this account and for filling in orders for the remainder of the year and first quarter deliveries, some consumers having underestimated their requirements. Shipments on existing contracts continue very heavy, considerable quantities going forward via Erie Canal, for which final cargoes for the season must be loaded by November 6, the canal closing November 15. Prices are firm and substantially the same as a week ago, except for basic, which has advanced slightly. We quote as follows per gross ton, f.o.b. Buffalo:

No. 1 X foundry.....	\$17.00 to \$17.50
No. 2 X foundry.....	16.75 to 17.25
No. 2 plain.....	16.50 to 17.00
No. 3 foundry.....	16.25 to 16.50
Gray forge.....	16.00 to 16.50
Malleable.....	17.50 to 18.00
Bessemer.....	19.00 to 19.50
Basic.....	17.75 to 18.25
Charcoal.....	20.25 to 21.00

Finished Iron and Steel.—Specifications are coming in liberally against contracts, and a good many new contracts are being closed for first quarter. Some of the mills, however, are still declining to take on new business even at advanced prices owing to their inability to make reasonably expeditious shipments and desiring to bring their deliveries down to more specific dates from the receipt of specifications. Ruling prices are 1.50c., Pittsburgh, for steel bars; 1.60c., Pittsburgh, for plates and small shapes for carloads and over, and 1.55c. and 1.60c., respectively, for less than carload lots. One leading interest is not accepting orders for less than carload lots from mill, turning over smaller orders for warehouse shipment at the higher prices. There has been an advance on spikes to a minimum of \$1.75, Pittsburgh, carloads, and \$1.80, less than carloads. Also an advance of \$5 per ton on proof coil chain, all taking effect the past week. The demand for billets is steadily increasing and prices are advancing. The local office of the leading interest reports the booking of an order during the week for 3500 tons of steel rails for delivery early next year, also large miscellaneous orders for the Canadian export trade. No new business in structural lines has been reported for the week except the placing of the contract for steel for the new freight house for the New York Central Railroad at Buffalo with the Buffalo Structural Steel Company.

Old Material.—The market is somewhat easier, in sympathy with the quiet condition prevailing in eastern Pennsyl-

vania, and owing to the slackened demand from many consumers, most mills having filled their requirements until the first of the year. No special buying movement is now looked for until after the inventory period the fore part of January. Prices remain practically stationary. We quote, as follows, per gross ton, f.o.b. Buffalo:

Heavy melting steel.....	\$16.50 to \$17.00
Low phosphorus steel.....	21.00 to 21.50
No. 1 railroad wrought.....	17.50 to 18.25
No. 1 railroad and machinery cast scrap.....	16.50 to 17.00
Old steel axles.....	20.00 to 21.00
Old iron axles.....	25.00 to 25.50
Old car wheels.....	18.00 to 18.50
Railroad malleable.....	16.50 to 17.00
Boiler plate.....	14.50 to 15.00
Locomotive grate bars.....	12.50 to 13.00
Pipe.....	13.00 to 13.50
Wrought iron and soft steel turnings.....	11.75 to 12.25
Clean cast iron borings.....	10.00 to 10.50
No. 1 bushing scrap.....	14.00 to 14.50

Cincinnati.

CINCINNATI, OHIO, October 27, 1909.—(By Telegraph.)

The outlook for next year in the iron and steel markets is less of a puzzle. Prices for the first half, at least on the crude product, are more confirmed and the markets all seem to present a more settled state. Visitors to the city from other iron centers in central territory tell of crowded conditions of foundries and scarcity of molders. Jobbing foundries are as a rule pouring capacity heats, and considerable difficulty is experienced in securing competent help. Some heavy purchases by the largest pipe interests in this market last week have tended to establish a trifle lower level on foundry irons for the remainder of the year. Coke continues very strong, but old material is a trifle weaker.

Pig Iron.—Transactions of the past week or so in this locality have shown a predominance of basic, and some large tonnages have been contracted for by St. Louis and Chicago consumers. A large St. Louis interest has bought about 30,000 tons, of which 15,000 comes from central Ohio and about 10,000 from Birmingham. The Northern basic is reported to have sold at about \$19.75, delivered, and the Southern at \$15, Birmingham, all deliveries through early months of next year. Another large St. Louis interest is reported to have taken several thousand tons of Southern basic at \$15. A local steel maker has bought about 3000 tons of Virginia. Good sales have been made of standard Southern car wheel iron at the maximum delivered price in this locality, namely, \$25.25. These go principally to Pittsburgh to roll makers. There is some malleable wanted; another Ohio plant of a large interest is inquiring for 1000 to 2000 tons for first quarter, but this may be deferred, because shipments on contracts are coming faster than had been anticipated. In foundry irons the sales are mainly of small lots and for early shipment. Only two furnace interests in southern Ohio are offering iron—Hanging Rock and Wellston. The early rehabilitation of the Steel Foundry Company, just sold to an Eastern syndicate, is projecting inquiries for steel making irons. Forge iron has about been cleaned up in this market during the past week and the price is about \$13.75, Birmingham. Two large pipe interests have bought about all that could be found. The price of \$15, Birmingham, on Southern No. 2 foundry for the first half is now rather well established, and it is reported to-day that a sale has been made into the third quarter on that basis. For prompt delivery and remainder of the year, and first half of 1910, based on freight rates of \$3.25 from Birmingham and \$1.20 from Ironton, we quote, f.o.b. Cincinnati, as follows:

Southern coke, No. 1 foundry.....	\$18.25 to \$18.75
Southern coke, No. 2 foundry.....	17.75 to 18.25
Southern coke, No. 3 foundry.....	17.25 to 17.75
Southern coke, No. 4 foundry.....	16.75 to 17.25
Southern coke, No. 1 soft.....	18.25 to 18.75
Southern coke, No. 2 soft.....	17.75 to 18.25
Southern gray forge.....	17.00
Southern mottled.....	16.75
Ohio silvery, 3 per cent. silicon.....	20.20
Lake Superior coke, No. 1.....	18.70 to 19.20
Lake Superior coke, No. 2.....	18.20 to 18.70
Lake Superior coke, No. 3.....	17.70 to 18.20
Standard Southern car wheel.....	24.75 to 25.25
Lake Superior car wheel.....	21.25 to 22.25

(By Mail.)

Coke.—The tendency is to advance prices wherever the excuse offers, and talk of \$5 coke is now heard. The Wise County operators have advanced their product to the same price as the Connellsville standard, and the price is now rather uniform for favorite brands of foundry coke, at \$3.50 per net ton at oven, although the nominal quotations are \$3 to \$3.40 for Connellsville foundry grades. Some prominent interests are predicting a recession in price ere the first of the year, believing that the advance has been greater than conditions warrant. Connellsville foundry coke on contract is quotable at oven at \$3.25 to \$3.50, and Wise County foundry \$2.75 to \$3 and \$3 to \$3.25, spot and contract, respectively.

Structural Material.—Although sales agencies here are advised of the action of the steel mills in throwing open the price of 1.60c., Pittsburgh, on structural material to April 1, they report that the latter are seemingly indifferent to business. Deliveries are two and three months behind. The demand is keeping up, but mostly small and medium sized jobs mark the run of orders. Twisted bars for concrete work are still selling well, notwithstanding the season is well advanced. Jobbers here are asking 1.90c. to 2c. on shapes and plates out of stock, and 1.60c., Pittsburgh, is about the best that can be done from the mills.

Bars.—The market is described here as tightening. Practically all steel bar interests are asking and getting 1.60c., Pittsburgh, and mills seem not disposed to sell beyond the first quarter at that. For comparatively early delivery such interests as are willing to take on additional business are asking 1.55c. to 1.60c., Pittsburgh. Iron bars are also stronger, and the smaller independent interests have raised their price to approximately that of the larger ones. Nothing less than 1.60c., local mill, is heard, and the price is largely regulated by deliveries. On bar steel and iron out of stock jobbers are asking 1.80c.

Sheets.—Locally the market is firmer than last week, and delivery possibilities grow daily more remote. Inquiries now come from not only the consumer, but the mill owner and independent producer who seek stock with which to fill their orders, from their fellow producers. Mills in this territory are not contracting for deliveries beyond the first of the year. The basing price of 3.35c., Pittsburgh, on No. 28 galvanized is the absolute minimum in contracting here, but in reality there is no basing price, it being now largely a matter of deliveries. Jobbers are charging the usual advances over the minimum mill price for small lots from store.

Old Material.—The market is described by a majority of the dealers as being a trifle weaker. There are some concerns which have been for some time running two shifts getting out material on contract. Melting steel is still the strongest item in this market, and the minimum is about \$16, gross ton. Cast scrap is a little easier, and the range is about \$14.50 to \$15. Borings and turnings are more nearly at a uniform price, \$8.50 to \$10 being about the range covering both items. For delivery in buyers' yards, Cincinnati and southern Ohio, prices asked by leading dealers are about as follows:

No. 1 R. R. wrought, net ton.....	\$14.50 to \$15.00
Cast borings, net ton.....	8.50 to 9.00
Heavy melting steel scrap, gross ton.....	18.00 to 17.00
Steel turnings, net ton.....	9.50 to 10.00
No. 1 cast scrap, net ton.....	14.50 to 15.00
Burnt scrap, net ton.....	10.50 to 11.00
Old iron axles, net ton.....	19.00 to 19.50
Old iron rails, gross ton.....	18.50 to 19.00
Old steel rails, short, gross ton.....	15.50 to 16.00
Old steel rails, long, gross ton.....	16.50 to 17.00
Relaying rails, 56 lb. and up, gross ton.....	22.50 to 23.00
Old car wheels, gross ton.....	15.50 to 16.00
Low phosphorus scrap, gross ton.....	18.00 to 19.00

Walter-Wallingford & Co. have been appointed selling agents for all territory except New York and St. Louis of the product of the Trussville and Chattanooga furnaces of the Southern Iron & Steel Company, effective at once. These furnaces have been idle for about two years, but are arranging to go into blast.

The whole Southwest has been disturbed by the failure of the Columbia Bank & Trust Company, Oklahoma City, the largest State bank in Oklahoma. The failure came in less than four weeks after an examination by the bank commissioner's office and the shrinkage in assets was over \$500,000. Under the bank guaranty deposit law the bank commissioner levied an additional special assessment on the State banks of $\frac{1}{4}$ per cent. of their deposits to make good losses to depositors. This means an average of nearly 4 per cent. on the capital stock of all State banks. In Nebraska recently the United States Circuit Court declared the guaranty deposit law unconstitutional.

Electric power to operate pumping plants for irrigation systems throughout a considerable section will be furnished by the Monterey County Gas & Electric Company, Pacific Grove, Cal., if the charter for an extension of transmission lines to Selinas is granted. This will necessitate increased equipment at the power station.

The Charles A. Stickney Company, St. Paul, Minn., manufacturers of gas and gasoline engines, has opened an office in the Empire Building, Pittsburgh, in charge of J. C. Bevan, secretary, who will handle business east of the Mississippi River.

Pittsburgh.

PARK BUILDING, October 27, 1909.—(By Telegraph.)

Pig Iron.—No important transactions in pig iron have occurred since the sale of 20,000 tons to the Jones & Laughlin Steel Company by the Bessemer Pig Iron Association for December and January delivery at \$19, Valley furnace. The same company will probably buy an additional block of iron for November and December delivery, and the purchase may go through this week. The demand for basic iron is a little more active, several inquiries being in the market for first quarter of next year delivery. The Bessemer Pig Iron Association has fixed the price of \$17.50 on basic for first quarter shipment. Prices are unchanged, but firm. We quote Bessemer iron, \$19 for rest of this year and first quarter of next year; basic, \$17 for prompt shipment and \$17.50 for first quarter; malleable Bessemer, \$17.75 to \$18; No. 2 foundry, \$17.25 to \$17.50, and gray forge \$16.25 to \$16.50, all at Valley furnace, the freight rate to Pittsburgh being 90c. a ton.

Steel.—Premiums are still being paid for prompt shipments of billets and sheet and tin bars. We quote Bessemer billets for prompt shipment at \$27 and open hearth at \$27.50 to \$28, at mill, full freight to destination added. No price has yet been fixed by the Carnegie Steel Company on sheet and tin bars for first quarter delivery. Forging billets are firm at about \$30, maker's mill, and are scarce.

(By Mail.)

The quieting down in new demand in finished lines of iron and steel is still apparent, but is not causing any uneasiness. In fact, the slackening off is rather welcomed by the mills, as it will give them a chance to arrange their rollings to better advantage, and probably to catch up to some extent on back orders. The principal item in the pig iron trade was the sale of 20,000 tons of Bessemer to the Jones & Laughlin Steel Company for December and January delivery at \$19, at Valley furnace, made by the Bessemer Pig Iron Association. The same company is in the market for more Bessemer iron for delivery this year, and may close the purchase this week. Deliveries on steel billets and sheet and tin bars are very much delayed, but the starting up of the Columbus Works of the Carnegie Steel Company on sheet bars will help out that company to some extent. For small lots of Bessemer billets for prompt shipment, \$27 at mill has been paid, while open hearth billets have sold at \$28. Sheet and tin bars for prompt shipment have sold at \$28.50 to \$29 and one or two prominent tin plate mills will pay \$28.50 for their bars for November delivery. As an indication of how specifications are being received by the mills, it can be stated that in the week ending October 23 the total specifications against contracts, and also new orders, booked by the Carnegie Steel Company on sheets, plates, axles, car wheels and bar mill products amounted to 126,000 tons. This enormous tonnage does not include orders for rails, billets and sheet and tin bars or other semifinished products. The scrap trade has quieted down somewhat, but prices are fairly steady. Several large contracts for furnace coke have been closed at \$2.85 to \$2.90 per ton at oven for shipment over the last half of next year.

Ferromanganese.—This material is showing all the marks of a stiff advance in prices in the near future, and it is stated that one or two large lots have been sold for delivery over the first half of next year at about \$2 a ton or more over prices quoted for delivery in the next two or three months. The quotations in this report last week of \$64 for prompt and \$64.50 to \$65, seaboard, for first half of next year were typographical errors; and should have read \$44 for prompt and \$44.50 to \$45 for next year, at seaboard, the rate to Pittsburgh being \$1.90 a ton. We quote the market at these prices, and note that it is very firm.

Ferrosilicon.—Sales of two cars of 50 per cent., or about 60 tons, for November and December, are reported at about \$64, Pittsburgh. We continue to quote 10 per cent. at \$22.90; 11 per cent., \$24.90; 12 per cent., \$25.90, and 50 per cent., \$63.50 to \$64, Pittsburgh.

Muck Bar.—There is not much new inquiry, but the

market is firm. We quote best grades, made from all pig iron, at \$29.50 to \$30, Pittsburgh.

Wire Rods.—A number of consumers are trying to cover their requirements through the first half of next year, but the makers of rods refuse to sell for this extended delivery except at an advance in prices. For this year's delivery we quote Bessemer, open hearth and chain rods at \$32, Pittsburgh.

Skelp.—We note a continued active demand for both iron and steel skelp, especially for sheared sizes and prices are firm. We quote: Grooved steel skelp, 1.45c. to 1.50c.; sheared, 1.55c. to 1.60c.; grooved iron plates, 1.75c. to 1.85c., and sheared iron plates at 1.90c. to 1.95c., all for ordinary widths and gauges, f.o.b. Pittsburgh.

Steel Rails.—Pending contracts from the New York Central and other roads have not yet been placed. The Edgar Thomson mills of the Carnegie Steel Company are operating to about 50 per cent. of capacity and have only a fair amount of work ahead. This company received new orders and specifications against contracts for light rails last week, for about 2000 tons. We quote steel axles at 1.75c. to 1.80c., and splice bars, 1.50c., at mill, Pittsburgh. Light rail prices are as follows: 8 to 10 lb., \$32; 12 to 14 lb., \$29; 16, 20 and 25 lb., \$28; 30 and 35 lb., \$27.75, and 40 and 45 lb., \$27, Pittsburgh. These prices are for 250-ton lots and over, and for small lots premiums of 50c. per ton and more are being paid. We quote standard sections at \$28, at mill.

Plates.—Buying of steel cars by the railroads has been quite active in the past week or two, and the plate mills, already filled up with work for several months ahead, have taken a good deal of new business. The Standard Steel Car Company will increase the capacity of its steel car works. The Pressed Steel Car Company is now turning out from 60 to 75 cars a day at its McKees Rocks works and will start up its Woods Run plant November 1, the output of which will be about 25 cars a day. The latter company is now specifying heavily for plates and other shapes with the Carnegie Steel Company, taking upward of 1200 to 1500 tons a day. The New York Central has placed an order for 4000 steel cars with the American Car & Foundry Company, 2000 steel hopper cars with the Pressed Steel Car Company and 1300 steel hopper cars with the Standard Steel Car Company. The Great Northern has placed 1000 steel ore cars with the Pressed Steel Car Company and the Norfolk & Western, Chesapeake & Ohio and other roads have been buyers of cars. Most of the plates and shapes for these cars will come from local plate mills, which now seem assured of steady work through the winter months and to full capacity. Plates for prompt shipment continue to command slight premiums. We quote ¼-in. and heavier at 1.50c., for forward delivery, while for prompt shipment 1.55c. to 1.60c. is asked.

Structural Material.—No large contracts have been placed and the general situation has quieted down a good deal. Several of the large structural fabricators are not bidding actively on the small new work that is coming up, being filled up for three or four months and not caring to compete with the low prices that are being made. Deliveries by the mills are still very unsatisfactory and show no signs of early improvement. Prices are firm. We quote beams and channels up to 15-in. at 1.50c., while small lots for prompt shipment command 1.60c. and higher in some cases.

Sheets.—Some of the sheet mills are willing to book new orders for black and galvanized sheets for delivery into the first quarter of next year at an advance of about \$2 a ton over regular prices, and several contracts have been placed on this basis. As yet it is not known what prices will be charged for sheet bars for delivery in first quarter, and the mills, therefore, are acting cautiously in the matter of taking contracts for sheets for next year's delivery. The American Sheet & Tin Plate Company is now operating about 85 per cent. of its sheet mills, its only idle works being the Aetna-Standard plant at Bridgeport, Ohio, containing 23 mills, but the company has made no efforts to start it. Prices, we are advised, are being absolutely maintained. Blue annealed sheets are quoted as follows: Nos. 3 to 9, 1.85c.; Nos. 9 and 10, 1.70c.; Nos. 11 and 12, 1.75c.; Nos. 13 and 14, 1.80c., and Nos. 14 and 15, 1.90c. One-pass box annealed No. 28 black sheets are now 2.30c. and No. 28 galvanized 3.35c., at mill. We quote corrugated roofing sheets at \$1.60 per share for painted and \$2.85 for galvanized, 2½-in. corrugations. Jobbers charge the usual advances over these prices for small lots from store.

Tin Plate.—The American Sheet & Tin Plate Company is now operating about 75 per cent. of its serviceable tin mill capacity, and is starting more hot mills every few days. The New Castle, Pa., works, containing 20 hot mills, is now running full for the first time since the strike started July 1. The Humbert Works of the same company at South Connelville, Pa., may possibly be started soon on the open shop plan. We quote 100-lb. cokes at \$3.50 per base box, f.o.b. Pittsburgh, for the remainder of this year and first quarter of next.

Bars.—The demand for both iron and steel bars is quite active, and this with the heavy specifications pouring into the mills makes any improvement in deliveries impossible. The several cards of extras issued by the leading steel bar mills, one giving net extras, while those of two prominent steel bar mills show double extras, have caused some confusion in the trade. A number of the leading Eastern and Western jobbers have decided to sell bars based on the cards showing double extras, and prices named on these cards will be on the basis of half extras in accordance with the custom prevailing for so many years. Several leading steel bar mills are still entering contracts for delivery in the first quarter at about 1.45c., at mill, but for reasonably prompt shipment 1.50c. to 1.55c. can be readily obtained. We quote iron bars at 1.55c., Pittsburgh, and the market is very strong.

Hoops and Bands.—Business is active and prices are firm. Specifications against contracts are coming in freely and the mills are full of work.

Spelter.—The market on this material continues strong, the recent sharp advances in prices being sustained. We quote prime grades of Western spelter at 6.10c., East St. Louis, equal to 6.22½c. Pittsburgh.

Spikes.—None of the large inquiries for spikes noted last week as being in the market has yet developed into actual orders, but there is steady buying by the railroads, and the makers of spikes have a good deal of work ahead, operating to full capacity. Prices on spikes are very firm, and for local trade standard sizes of railroad spikes are now held at \$1.75 to \$1.80, while for delivery in Eastern and Western territory \$1.70 to \$1.75 is quoted in carload and larger lots, with 5c. per keg advance for small lots.

Shafting.—This material is experiencing quite an active demand. Several of the local makers report that they have more actual orders on their books at present than at any former time for more than two years. Specifications against contracts placed some time ago are coming in freely and shipments are heavy. The market is firm, on the basis of 57 off in carload lots and 52 in less than carload lots, delivered in base territory and for delivery this year, while for delivery next year quotations are 55 in carload and larger lots and 50 off in less than carload lots, delivered in base territory.

Rivets.—The advance of \$3 a ton on rivets, made last week, is being firmly held. New demand continues heavy, and specifications against orders placed before the recent advance in prices are coming in freely. Prices are as follows: Structural rivets, ¾ in. and larger, 2.05c., base; cone head boiler rivets, ¾ in. and larger, 2.15c., base; ½ in. and 11-16 in. take an advance of 15c., and ½ in. and 9-16 in. take an advance of 50c.; in lengths shorter than 1 in. also take an advance of 50c. Terms are 30 days, net cash, f.o.b. mill.

Merchant Pipe.—The Manufacturers' Light & Heat Company is in the market for about 10 miles of 6-in. pipe for quick delivery, desiring to lay it before the weather breaks. Several of the pipe mills will not quote on this inquiry, not being in position to make the deliveries wanted. Prices on oil country goods have been advanced about \$2 a ton, the discount now being 77 per cent. off. Discounts on both iron and steel pipe are firm, but the expected advance in prices of steel pipe has not yet taken place. The official discount on black steel pipe, ¾ to 6 in., is now 80 and 5, and on iron pipe, ¾ to 6 in., 75 and 5, in carload and larger lots to the largest trade. It should be noted that these prices are absolutely minimum, and are only made to the large trade in carload and larger lots, jobbers charging the usual advances to the smaller trade for shipments from store.

Boiler Tubes.—The demand for locomotive tubes is more active than for some time, and merchant tubes are also showing some betterment. Prices are firmer than they were, but regular discounts, printed elsewhere in this issue, are still being shaded to some extent.

Iron and Steel Scrap.—New demand for scrap has quieted down a good deal, consumers not being willing to pay the high prices asked by dealers. The tonnage of scrap now being sold is lighter than for some time. We note an active inquiry for cast scrap and prices are higher, but turnings and borings are dull and prices are weaker. The scarcity in the supply of sheet bars has caused a more active inquiry for sheet bar crop ends, which are higher in price and harder to obtain. We have advanced prices on No. 1 cast scrap, cupola sizes, also on sheet bar crop ends and on iron axles, all of which are in good demand. The scrap list of the New York Central closes November 4, but several local dealers will not quote on this list, owing to present conditions in the scrap market. Dealers quote about as follows, per gross ton: Heavy steel scrap, for delivery at the principal consuming points, such as Steubenville, Follansbee, Monessen, Sharon and Pittsburgh, \$18; cast iron borings, \$11.50 to \$11.75; bundled sheet scrap, \$16.25 to \$16.50; low phosphorus melting stock, 0.04 and under, \$21.50; No. 1 cast scrap, cupola sizes, \$17.50 to \$17.75; No. 2, \$16 to \$16.25;

sheet bar crop ends at shipping point, \$20 to \$20.50; No. 1 railroad malleable scrap, \$16.75 to \$17; grate bars, \$14.25 to \$14.50; rerolling rails, delivered at Cambridge and Newark, Ohio, \$18.25 to \$18.50; steel axles, \$22; locomotive axles, \$28 to \$28.50; iron axles, \$28 to \$28.50; No. 1 busheling scrap, \$16.50 to \$16.75; No. 2, \$13.50 to \$13.75; old car wheels, \$19 to \$19.25; machine shop turnings, \$13.25 to \$13.50; No. 1 railroad wrought scrap, \$19.25 to \$19.50.

Coke.—The disposition among blast furnace owners to defer placing contracts for furnace coke on account of the high prices asked is still a feature of the market. However, we note a sale of upward of 75,000 tons of standard Connellsville blast furnace coke for delivery over the first half of next year at \$2.90 per net ton, at oven. Best makes of furnace coke for prompt shipment can be had at \$2.75 to \$2.80 per net ton, at oven, while on contracts for first half of next year \$2.85 to \$2.90 is being quoted. Standard makes of 72-hour foundry coke for shipment in first half are still held at \$3 to \$3.50, at oven, but we do not hear of any contracts having been placed at the higher figure. The output of coke in the Upper and Lower Connellsville regions last week was about 425,000 tons, a decrease over the previous week of about 12,000 tons, due largely to the continued shortage in labor.

Cleveland.

CLEVELAND, OHIO, October 26, 1909.

Iron Ore.—Some reservations of ore for next season are being made, and it is probable that quite a large tonnage of some of the high grades ores will be allotted before the regular buying movement sets in. Ore firms, however, are not encouraging an early buying movement and do not expect to take definite action on next year's prices for some time. Shipments down the lakes continues heavy, but boats are not getting as good dispatch as desired at lower lake ports, owing to a scarcity of cars. The car shortage is due largely to the movement of coal, which at present is very heavy. The demand for vessel tonnage in the ore trade is slightly greater than the available vessel capacity, and the boats will have all the cargoes they need until the close of navigation. The active demand for ore late this season has resulted in the cleaning up of a number of small lots of unsold ore that have been on the lower lake docks for the past two or three years. Prices at Lake Erie docks, per gross ton, are as follows: Old Range Bessemer, \$4.50; Mesaba Bessemer, \$4.25; Old Range non-Bessemer, \$3.70; Mesaba non-Bessemer, \$3.50.

Pig Iron.—There is an improvement in the demand for off grades of foundry iron, considerable having been sold during the week to large foundry interests for last quarter delivery. The demand for this iron has apparently been stimulated by the high prices that are prevailing for cast scrap. Outside of this, the foundry iron market continues quiet. The only sales reported in the local market during the week are a number of lots of 200 tons and under for first quarter and first half delivery. Prices continue firm, all sales made by local furnaces being on the basis of \$18, at furnace, for No. 2. In the Valley No. 2 is firm at \$17.50 for delivery after the first of the year. There is no demand for spot iron, but foundries are taking iron freely on contracts and furnaces are shipping out practically all of their product as fast as made. While a majority of the smaller consumers in this locality have contracted for foundry iron for either the first quarter or half, some of the largest have as yet bought no iron for delivery after the first of the year. Several furnace interests that have sold a fair tonnage are staying out of the market, holding for a price of \$18, Valley. Local interests report the sale of some Bessemer iron at \$19, Valley. Inquiries for basic iron continue quite plentiful, and there is an improvement in the demand for malleable Bessemer. Southern iron shows a little more activity in this market, and several sales are reported of lots of 400 tons and under for first quarter delivery at \$15, Birmingham, for No. 2. For the balance of the year we quote, delivered, Cleveland, as follows:

Bessemer	\$19.90
Northern foundry, No. 1	\$18.65 to 18.90
Northern foundry, No. 2	18.15 to 18.40
Northern foundry, No. 3	17.65 to 17.90
Southern foundry, No. 2	19.35
Gray forge	17.00 to 17.25
Jackson County silvery, 8 per cent. silicon	20.55

Coke.—There is a fair volume of inquiry for foundry coke. Many consumers have not yet contracted for the first half, and the present high price quotations are not bringing out much business. We quote standard Connellsville furnace coke at \$2.85 per net ton, at oven, for spot shipment, and \$2.90 to \$3 on contract. Connellsville 72-hour foundry coke is held at \$3 to \$3.25 for spot shipment and \$3.25 to \$3.50 for the first half.

Finished Iron and Steel.—Mill agencies continue to receive a large volume of specifications on contracts. Deliveries on steel bars are growing worse and on plates and structural material show no improvement. Local mill

agencies report that they could close contracts for heavy tonnages if they had authority to do so, but some of the mills are entirely out of the market for the present and are not inclined to take on any more until they catch up considerably with the orders already on their books. The demand for steel bars continues heavy. For orders accompanied by specifications, and on which no promise is made regarding deliveries, bar business is being taken at 1.40c. to 1.45c., Pittsburgh, but a premium of \$2 to \$4 a ton is being paid for early shipment. The demand for iron bars has increased materially, and local mills are crowded with new orders and specifications that have come in during the past few days. Prices are firmer. We quote iron bars at 1.55c. to 1.65c., Cleveland. The demand for plates continues heavy. Fairly good deliveries can be secured on sheared plates, but universal plates are scarce for early shipment. For prompt shipment consumers are paying a premium of \$2 a ton for plates. Some contracts for the first quarter delivery are being closed at 1.60c., Pittsburgh, for both plates and structural material, but some of the mills are adhering to the 1.50c. price for orders for shipment for forward delivery. Now that the rush of the building season is nearly over, the demand for small lots of structural material for quick delivery is not so active, but mills are still getting a premium of \$2 to \$4 a ton for immediate shipment. Ohio bridge builders are figuring on a contract for a municipal bridge in St. Louis, and have made an inquiry among local mill agencies for 9000 tons of structural material for that work. The demand for sheets continues very active. Deliveries are getting further behind, and this has resulted in considerable increase in the demand for sheets from warehouses. Ohio railroads have inquiries out for about 10,000 tons of rails, for which it is expected that orders will be placed within the next few days.

Old Material.—The demand for rolling mill scrap is not so active, few inquiries coming from either the local or outside mills. Dealers account for the lull in buying to the fact that mills are now receiving quite heavy shipments of scrap bought during the past few weeks, and many of the yards are becoming well filled up. The demand for cast scrap continues quite active, foundries still buying liberally. The market is firm on all grades. Price quotations remain about stationary. Prices, per gross ton, f.o.b. Cleveland, are as follows:

Old steel rails.....	\$17.50 to \$18.00
Old iron rails.....	20.50 to 21.00
Steel car axles.....	20.50 to 21.00
Old car wheels.....	17.50 to 18.00
Heavy melting steel.....	17.00 to 17.50
Relaying rails, 50 lb. and over.....	22.50 to 23.50
Agricultural malleable.....	15.00 to 15.50
Railroad malleable.....	17.00 to 17.50
Light bundled sheet scrap.....	11.50 to 12.00

The following prices are per net ton, f.o.b. Cleveland:

Iron car axles.....	\$21.50 to \$22.00
Cast borings.....	8.75 to 9.00
Iron and steel turnings and drillings.....	11.00 to 11.25
Steel axle turnings.....	12.00 to 12.50
No. 1 busheling.....	14.50 to 15.00
No. 1 railroad wrought.....	17.25 to 17.50
No. 1 cast.....	15.00 to 15.50
Stove plate.....	12.50 to 13.00
Bundled tin scrap.....	11.00 to 11.50

Metal Market.

NEW YORK, October 27, 1909.

Copper.—A very wide range of prices is being quoted, and it is evident that some of the leading interests are practically out of the market, refusing to sell at what they would be obliged to take. On the Metal Exchange not enough interest is being taken in the situation for sellers to make quotations, and as the demand continues to be much under the output little hope is held out for a betterment in the situation in the immediate future. It is true that many consumers are pretty close to the end of their stocks, but the inquiries they are making show that they prefer to buy from hand to mouth for the present. The larger holders have been unsuccessful in their endeavors to keep the quotations for electrolytic above 13c., and offerings from smaller interests are plentiful enough to give a careful buyer an opportunity to purchase the metal at a lower price. There is a scarcity of casting copper, and its price is pretty close to electrolytic. The London market has taken on a more cheerful tone during the last few days, but the only parties there who seem to be interesting themselves in the situation to any great extent are the speculators. The exports of copper so far this month amount to 18,835 tons. Spot copper sold in London to-day for £56 10s. and futures for £57 12s. 6d., and the sales amounted to 800 tons of spot and 1000 tons of futures. In the New York market to-day we quote lake copper at 13.25c., electrolytic at 12.87½c. and casting copper at 12.75c.

Waterbury Average.—The Waterbury average on copper for several months has been as follows: May, 13¼c.; June, 13½c.; July, 13½c.; August, 13½c.; September, 13½c.

Pig Tin.—The demand is light. During the present week 2000 tons of tin were laid down at the docks in New

York, 1500 tons of which came in on Monday on an Eastern steamer, and 500 tons arrived from London. The bulk of this tin is owned in London, and in consequence the price is being held a little above the cost of import. The trade has been discussing the probable monthly production, and estimates of the stock on hand have ranged from 3000 to 4500 tons. It is evident that some shipments from the Straits have been held back to keep down the stocks, but as this is a particularly speculative move it has not deceived consumers. It is apparent that the figures will show at the end of the month that there will be about at least 3900 tons of available tin. Prices in the New York market for the week were as follows:

	Cents.
October 20.....	30.40
October 21.....	30.45
October 22.....	30.45
October 25.....	30.35
October 26.....	30.55
October 27.....	30.50

In London to-day spot tin was sold for £138 5s. and futures for £140 2s. 6d.

Tin Plate.—Considerable tin plate has been imported during the last few weeks and sold to can makers, who declare their intention of making the plate up for export, which will, of course, give them a drawback on the duty paid. Some people have an idea, however, that some of this tin will be held in stock and may be utilized for domestic consumption, providing the supply of tin plate continues scarce. Even at the advanced price made a few weeks ago some of the independent mills are demanding premiums for early delivery. It is apparent that most of the mills are booked well into the first quarter of next year. At present sellers are asking \$3.74 for 100-lb. I C coke plates.

Lead.—Lead is softer again, and there have been rumors of sales of outside lots below the price which is being maintained by the American Smelting & Refining Company. Most of the independent sellers, however, continue to demand 4.40c., which is the price established by the larger interests. In St. Louis to-day the market is ragged and 4.25c. is being asked.

Spelter.—There is not an excessive demand for spelter, but it continues to advance, and some sellers are now asking 6.30c. The greater part of the spelter now being sold is being taken by the galvanizing interests, and the general trade is asking for but little. A careful buyer might obtain spelter in New York at present for 6.25c., but nothing under that figure. In St. Louis spelter is selling at 6.10c.

Antimony.—The situation is dull and uninteresting. Hallett's is 8.25c.; Cookson's, 8.30c.; other brands, 7.75c.

Old Metals.—The market is unsettled. The following dealers' selling prices are somewhat nominal:

	Cents.
Copper, heavy cut and crucible.....	12.75 to 13.00
Copper, heavy and wire.....	12.25 to 12.50
Copper, light and bottoms.....	11.50 to 11.75
Brass, heavy.....	9.00 to 9.25
Brass, light.....	7.25 to 7.50
Heavy machine composition.....	11.75 to 12.00
Clean brass turnings.....	8.25 to 8.50
Composition turnings.....	9.50 to 9.75
Lead, heavy.....	4.20 to 4.25
Lead, tea.....	3.90 to 3.95
Zinc scrap.....	4.15 to 4.25

Iron and Industrial Stocks.

NEW YORK, October 27, 1909.

Persistent liquidation, brought about by higher interest rates on money, forced prices down steadily for a considerable part of the past week. The lowest prices were made on Saturday and Monday. Some recovery then set in and a higher level of prices prevailed until Tuesday when another decline occurred. The range of prices on active iron and industrial stocks from Thursday of last week to Tuesday of this week was as follows:

Allis-Chalm., com..	14 - 14½	Railway Spr., com..	45 - 46
Allis-Chalm., pref..	50 - 52½	Railway Spr., pref.....	105
Beth. Steel, com....	32½ - 33	Republic, com.....	44 - 46½
Beth. Steel, pref....	63 - 65½	Republic, pref.....	103½ - 105½
Can, com.....	11¼ - 12½	South. I. & S., com..	18¼ - 19½
Can, pref.....	80½ - 82½	South. I. & S., pref..	50½ - 51
Car & Fdry, com....	68 - 70½	Sloss, com.....	89 - 91½
Car & Fdry, pref....	117½ - 117½	Pipe, com.....	31 - 32½
Steel Foundries....	60 - 60½	Pipe, pref.....	85 - 85½
Colorado Fuel.....	43½ - 45½	U. S. Steel, com....	86¼ - 90½
General Electric....	159½ - 164½	U. S. Steel, pref....	125½ - 127½
Gr. N. ore cert....	78 - 81	Westinghouse El....	83½ - 86
Int. Harv., com....	98 - 99	Va. I., C. & Co.....	70
Int. Harv., pref....	124 - 125½	Chi. Pneu. Tool....	31 - 34
Int. Pump, com....	46½ - 48½	Am. Ship, pref.....	111 - 111½
Int. Pump, pref....	88 - 88½	Cambridge Steel....	44½ - 47
Locomotive, com....	57 - 59	Lake Sup. Corp....	26½ - 28½
Locomotive, pref....	115 - 116	Warwick.....	11½
Nat. En. & St.com. 20	- 20½	Crucible St., com....	13½ - 14½
Pressed St., com....	46½ - 49½	Crucible St., pref....	82 - 84½
Pressed St., pref....	105½ - 107	Harb.-W. Ref., com....	32
		Harb.-W. Ref., pref....	95

Last transactions up to 1.30 p.m. to-day are reported at the following prices: United States Steel common 87½, preferred 126½, bonds 105½; Car & Foundry common 69½, preferred 117½; Locomotive common 57½, preferred 115;

Steel Foundries 60½; Colorado Fuel 44½; Pressed Steel common 48½, preferred 106; Railway Spring common 45½; Republic common 45, preferred 104; Sloss-Sheffield common 90½; Cast Iron Pipe common 31½, preferred 85; Can common 11½, preferred 81½.

Dividends.—The American Brass Company has declared a regular quarterly dividend of \$1.25 a share and an extra dividend of \$1 a share, payable November 1.

The United States Steel Corporation has declared the usual quarterly dividend of 1¼ per cent. on the preferred stock, payable November 30, and has raised the quarterly dividend on the common stock to 1 per cent., payable December 30.

New York.

NEW YORK, October 27, 1909.

Pig Iron.—There has been considerable business during the week, and the demand continues active. Connecticut foundries have purchased a liberal amount of malleable iron, and foundry iron has been bought in round lots. The feature of the market is the buying by foundries of moderate size, who have hitherto taken small blocks, of very much larger quantities for delivery during the first quarter and first half. A large inquiry from a railroad foundry, which was up some weeks ago, has appeared again, the specifications having been modified. We quote New York prices as follows: Northern No. 1 foundry, \$19 to \$19.50; No. 2 foundry, \$18.50 to \$19, and No. 2 plain, \$18 to \$18.50, for delivery in 1909. Alabama irons are quoted on the basis of \$19 to \$19.25 for No. 2 foundry.

Steel Rails.—Interest in the rail situation has shifted from the West to the East. The Western roads having taken up the capacity of the Gary and South Chicago mills for rollings in the early months of 1910, there is less eagerness to place business in the Chicago district. The New York and Pennsylvania mills have a good volume of inquiry before them just now, including that from the Vanderbilt lines, commonly put at about 250,000 tons. The Lehigh Valley, Philadelphia & Reading and Central of New Jersey now have inquiries in, amounting together to about 40,000 tons. The Chesapeake & Ohio is also in the market. The Pittsburgh mill sold about 9000 tons of rails last week, including 3500 tons for the Bessemer & Lake Erie Railroad. An inquiry for 5000 tons for Mexico is still before the trade. Light rail business is reported to have been excellent of late.

Structural Material.—The lack of new inquiry continues to be the feature of the structural steel trade. Some orders for plain material for shipment in the first quarter of next year have been booked, but there is no disposition on the part of the structural mills to sell ahead in view of the amount of material yet to be delivered on 1909 contracts—considerably more than can be rolled in the next two months. In the case of the leading fabricating company promised deliveries can now be realized—not so much because the mills are making better deliveries, as that the fabricated work on which deliveries were promised on the basis of mill performance earlier in the year, and which was held up by the inundation of business that swamped the mills through the summer, is now at last out of the way. Fabricators' promises in recent months have been gauged to the longer drawn schedules of the mills. The absence of new business is causing some comment. It may represent a natural pause, due to the fact that prices have moved up very considerably from the level of the bulk of this year's business. With the withdrawal of special inducements to put up buildings there is found little reason to hurry such projects through. The largest piece of work on which bids have gone in this week is the highway bridge between Bellaire, Ohio, and Benwood, W. Va., over the Ohio River, 3300 tons. The American Bridge Company has taken the Scarborough Building, Austin, Texas, 800 tons; the Jay Street Viaduct on Staten Island, 500 tons; the Portland, Ore., Chamber of Commerce Building, 400 tons, and 1800 tons of ore dock work for the Chicago & Northwestern Railroad, at Escanaba, Mich. For a Boston & Maine shop, near Boston, a contract for 400 tons was awarded Lewis F. Shoemaker & Co. The West shows considerably more activity on the whole just now than the East. For plain material quotations on mill shipments, tidewater deliveries, range from 1.66c. to 1.76c., and stock cut to length is sold at 1.90c. to 2c.

Ferroalloys.—The inquiries for ferromanganese continue good, and prices have stiffened somewhat. The market is quoted at \$44 to \$45, New York. The demand for ferrosilicon during the last week has been so quiet that it is hard to establish a market figure. Ferrosilicon is getting scarce, and it might be hard to obtain it at the price made in the last sale reported, which was \$63. We quote it from \$63 to \$64.

Bars.—Iron bars are much stronger as a result of the increasing demand. It is believed that 1.65c., tidewater, is now the lowest price current for assortments of ordinary merchant iron, while refined and special test bars for railroad use are held by some mills as high as 1.75c., New York,

with manufacturers accepting orders only for prompt shipment. Steel bars are quoted at 1.66c. to 1.71c., tidewater, but none of the makers can promise early delivery.

Wrought Pipe.—Most of the iron pipe manufacturers are exceedingly busy, and are 30 to 60 days behind in making deliveries. Some of the manufacturers of steel pipe are so crowded as to refuse specifications for prompt shipment.

Cast Iron Pipe.—Consumers appear to have thoroughly wakened up as to the possibility of a higher level of prices for next year's delivery, and orders and inquiries are coming out in most encouraging fashion. The most important development in this direction has been the purchase of about 25,000 tons by the Chicago gas interests. This is about to be followed by purchases by a number of other gas companies. In this movement New England companies are quite prominent, as bids are being asked by companies in Pawtucket, R. I., and New Haven, Conn., for quite heavy quantities for delivery next year. The city of New York will open bids for about 3400 tons of water pipe on October 29. The demand for small lots for fall delivery continues quite urgent, the business of this character making a noteworthy aggregate. Prices are stronger, carloads of 6 in. being quoted at \$25.50, minimum, per net ton, at tidewater.

Scrap.—The current demand is considerably smaller than it has been, but is still of a general character. As noted last week, the foundry demand seems to be most conspicuous. Dealers' stocks of all grades of scrap are now running low, as heavy shipments are being made on contracts placed in September or early this month. The consequence is that most consumers are getting a reasonably ample supply of stock, so that their requirements are not pressing. This has brought about a weaker feeling in steel scrap, and in some other grades of old material, and it is possible that quotations might be shaded 50c. per ton or more. Evidently the top of the market has been reached. Dealers are of the opinion that present conditions will continue through the remainder of the year, but are looking forward with confidence to higher prices early in 1910. Quotations are as follows, per gross ton, New York and vicinity:

Rerolling rails.....	\$17.00 to \$18.00
Old girder and T rails for melting....	15.75 to 16.00
Heavy melting steel scrap.....	15.75 to 16.00
Relaying rails.....	22.50 to 23.00
Standard hammered iron car axles.....	24.50 to 25.00
Old steel car axles.....	21.50 to 22.00
No. 1 railroad wrought.....	18.50 to 19.00
Wrought iron track scrap.....	16.50 to 17.00
No. 1 yard wrought, long.....	16.50 to 17.00
No. 1 yard wrought, short.....	16.00 to 16.50
Light iron.....	11.00 to 11.50
Cast borings.....	10.50 to 11.00
Wrought turnings.....	12.50 to 13.00
Wrought pipe.....	14.75 to 15.25
Old car wheels.....	16.00 to 16.50
No. 1 heavy cast, broken up.....	15.50 to 16.00
Stove plate.....	13.00 to 13.50
Locomotive grate bars.....	13.00 to 13.50
Malleable cast.....	16.00 to 16.50

The German Iron Market.

BERLIN, October 14, 1909.—The situation in the iron market has been rather quieter for a week. Less has been heard about price advances and the increasing demands of consumers than during September. The slight reaction in iron prices reported from New York at the end of last week probably has something to do with this quieter tone of the market, that news having made a considerable impression in Germany. The market reports for a week make no mention of American buying. From Belgium, however, comes the news that Americans have been asking for samples of pig iron, with prices, from a number of Belgian and Luxemburg furnaces. These samples have already been sent, and the furnaces are looking for orders in return. It is also mentioned in the Belgian reports that some big American orders for scrap iron and steel have been taken. The price there for basic iron has risen to 64 francs per ton; Belgian foundry commands 60 francs.

So far as the German market is concerned, there is only one price advance to report this week. The Silesian mills have raised bars 5 marks. Besides this there has been a further rise in galvanized sheets; but this was due to the rise in the price of spelter.

The market reports seem more disposed than several weeks ago to dwell upon unfavorable factors in the situation, or to minimize the improvement of the trade within the past two months. Thus, some of them mention the fact that business with the Siegerland ore producers is still most unsatisfactory, and that contracts for the first quarter of 1910 are much behind expectations. Another market review complains that much of the recent improvement in the bar trade has been speculative, dealers placing large contracts with the hope of disposing of their purchases later on at higher prices. Moreover, the unsatisfactory position of the detached furnaces and rolling mills remains practically unrelieved; it is chiefly the great mixed works apparently that are getting the lion's share of the recent improvement.

The Machinery Trade.

NEW YORK, October 27, 1909.

Business in the local machinery trade has not been particularly good the past week, as compared with other weeks for the last three months, and some people have the impression that higher prices which have been quoted all along the line have adversely influenced prospective buyers to some extent. It is not argued, however, that these prices are not warranted, as increased cost of material and scarcity of labor are having a material effect. Machine tool manufacturers are busy enough filling orders, and their chief complaint is that they are obliged to pay high prices for labor, and even at that are unable to get the number of skilled mechanics they require. Business here, as compared with the condition of the trade as reported from the Middle West, is not so flourishing, but from all accounts the buying there comes chiefly from the automobile industry. In this vicinity there are not so many automobile manufacturers, but what few there are have helped in keeping the order books filled. As an indication of the remarkable demand for machinery that has come from the automobile trade the experience of one machine tool builder is an excellent criterion. Recently he received an order for 70 special machines from one automobile manufactory, and in consequence was obliged to devote his plant to the production of those machines exclusively for a number of weeks. With the exception of the Norfolk & Western Railroad's list, mentioned last week, there are no inquiries of any size on the market, and the railroads continue to hold off in making purchases that have been expected to come forward for the last six months.

A prominent machinery man who made a tour of the railroads in the South last week declares that a number of railroads there are crowded with repair work and are badly in need of equipment. The same condition, he states, prevails in the West, and with an increasing demand for cars it will not be long until the railroads are heard from with some good sized inquiries. There is a growing demand for steel castings and cut gears, and manufacturers of those lines are not so anxious to place long time contracts as they were in the beginning of the year. One large manufacturer of steel castings is reported to have refused to make a contract to deliver castings over a longer period than three months. The demand for second-hand equipment continues good, and some sellers who deal in both new and second-hand machinery say that of late inquirers who have asked for figures on new tools have shown a disposition to consider the buying of second-hand machinery.

The Pierce-Arrow Motor Car Company, Buffalo, N. Y., whose plans for extensions amounting to \$200,000 were mentioned last week, has been placing a number of orders in this vicinity. The company also has inquiries out for additional equipment, and will buy considerable in the way of general machinery.

The Max Ams Machine Company, Mount Vernon, N. Y., is buying machinery in this territory to be added to its manufacturing equipment.

The United States Brake Shoe Company of Corry, Pa., has awarded a contract for the erection of a steel and concrete building, 90 x 200 ft., a large part of which will be used as a foundry and the rest for general manufacturing purposes for making the company's line of brake shoes. The company will probably need considerable in the way of machinery, but it is understood that that subject has not as yet been taken up. Work on the structure, it is announced, will be rushed, as at present the company is hardly able to fill the large and increasing demand for its equipment.

Considerable foundry, machine and pattern shop equipment will be required by the Riverview Bronze & Mfg. Company, 17-30 Gull street, Buffalo, N. Y., which was recently organized to manufacture manganese and phosphor bronze, brass and aluminum castings for automobiles and motor boats. The company intends to erect two buildings, one 50 x 60 ft. and another 50 x 96 ft., which are to be constructed of concrete and galvanized iron. The company is capitalized for \$50,000 and its officers are all men who are familiar with the line of business they intend to follow. Patrick F. Woods, who has been conducting a pattern shop in Buffalo and who is well known in the foundry trade, is interested in the new company, and R. P. Dear-dorff is the secretary and treasurer.

We are informed by the Edisto Power Company, Orangeburg, S. C., that arrangements are being made for the construction of a plant to develop 10,000 hp. of from 5 to 6 unit plants on the Edisto River. The enterprise will involve an expenditure of about \$1,000,000 and arrangements will be made to meet more extensive developments later on. The matter is at present in the hands of

Wolfe & Barry, of Orangeburg, who desire to obtain information on hydro-electric machinery and general power equipment. At first the company will be in the market for an emergency steam plant of from 100 to 2000 hp.

The Atha Steel Casting Company of Newark, N. J., is arranging to construct an addition to its plant at Chapel street and Lister avenue, 23 x 190 ft. in size, which will be occupied as a chipping shed. The building will be of concrete, with corrugated iron roofing, and its erection was necessitated by the crowded conditions of its present shop, due to a large increase in business during the last few months. The new buildings will be thoroughly equipped with electric hoists and traveling cranes for proper handling of the material.

A foundry, forge shop, planing mill, woodworking shop and machine shop will probably be erected this winter by the Denver City, Colo., Tramway Company, as part of a general repair and maintenance scheme, which is expected locally to develop into car building works. It is too early as yet to learn anything definite concerning the equipment, but the above information comes from a reliable source.

The B. F. Brown Gas Engine Company, 402 South Franklin street, Syracuse, N. Y., recently organized, will take over the business formerly conducted by B. F. Brown and will manufacture gasoline engines and accessories, principally for the marine trade, in addition to conducting a general machine shop. H. T. Hull of Morristown, N. J., is president of the new organization, and Mr. Brown will continue with the company as vice-president and general manager. H. T. Gardenier is secretary and treasurer of the company.

The Nevada, California & Oregon Railroad, George S. Oliver, chief engineer, Reno, Nev., will make an important extension to its shops at Reno by erecting a structure costing at least \$25,000, part of which is to be used for office purposes and the rest for enlarging its repair facilities.

The John R. Keim Mills, Buffalo, N. Y., will install in an extension to its plant which is now equipping four large specially designed annealing furnaces connected by the most approved type of pyrometer obtainable and some heavy hammers made by the E. W. Bliss Company, Brooklyn, N. Y., in addition to four or five long stroke heavy drawing presses for the cold cupping of heavy steel.

The Gurney Ball Bearing Company, Jamestown, N. Y., whose incorporation was noted in these columns last week, is in the market for lathes, grinding and polishing apparatus, a tempering outfit and shafting, together with gas engine power outfit, to be installed in its proposed plant for the manufacture of the Gurney ball bearings, which have heretofore been made in leased quarters.

A manufacturer desires full information, with particulars of cost, relative to the equipment of a small plant to manufacture bolts and rivets. Those in a position to furnish such an equipment should address "Machinery Department," *The Iron Age*, New York.

Among electric railroad and power companies recently organized for construction purposes are the St. Joseph & Savannah Railroad Company, Savannah, Mo.; Denver, Colorado Springs & Pueblo Interurban Electric Railroad, Denver, Colo.; Roseburg & Marshfield Railroad, Roseburg, Ore.; Cincinnati, Madison & Western Traction Company, Madison, Ind.; San Diego, El Cajon & Escondido Railroad, San Diego, Cal.; Bedford, Fulton & Franklin Railroad Company, Bedford, Pa.; Waynesburg & Blackville Street Railroad Company, Waynesburg, Pa.; Spokane, Walla Walla & Western Railroad, Walla Walla, Wash.; Columbus & Air Line Traction Company, Columbus, Ohio; Idaho Central Railroad, Spokane, Wash.; Fairmont & Northern Traction Company, Fairmont, W. Va.; Skagit, Cascade & Chelan Railroad, Tacoma, Wash.; Glen Rose & Walnut Springs Railroad, Glen Rose, Tex.; Vallejo & Northern Electric Railroad, Vallejo, Cal.; Syracuse, Lake Shore & Northern Electric Railroad Company (extension), Syracuse, N. Y.; South Bend & Logansport Traction Company, South Bend, Ind.; New Mexico & Pacific Railroad, Las Cruces, N. M.; Kankakee & Urbana Traction Company, Kankakee, Ill.; Hickory Railroad Company, Hickory, N. C.; Tidewater Northern Railroad, Los Angeles, Cal.; Slippery Rock & Grove City Railroad, Slippery Rock, Pa.; Royersford Interurban Traction Company, Royersford, Pa. In most of these cases the purchase of track and line material will be deferred until grading approaches completion; but power and sub-station equipment will be contracted for as soon as sufficient construction bonds have been placed.

New or improved pumping plants for water and sewage systems, some of which will be electrically operated, are planned for East Spencer, N. C.; Madisonville, Ky.; Lutkin, Tex.; Athens, Tex.; East Alton, Ill.; Croghan, N. Y.; Albion, N. Y.; Hermann, Mo.; Vale, Ore.; Gorman, W. Va.; Bridgeport, Pa.; Calumet, Mich.; Crestline, O.; Maple Creek, Suss.; Henefer, Utah; Oconto, Neb.; Ogallala, Neb.; Centralia, Mo.; Walter, Okla.

Business Changes.

The American Goetze Gasket & Packing Company, now at 527 East 149th street, New York, will on November 1

have its main offices at New Brunswick, N. J. The company requests that its mail be addressed to Post Office box 44 at New Brunswick, to insure quick delivery of mail matter.

New England Machinery Market.

BOSTON, MASS., October 26, 1909.

Comment on the machine tool trade is still confined to its failure to realize the expectation of a strong early autumn market for the dealers. Indications continue to point to a resumption of general buying on a large scale. The machine tool builders, however, have little to complain of. Planers and some others of the heavier tools are not moving well as yet, according to the average experience. The labor market is a source of genuine drawback. Reports of new industries to be established on a large scale are heard, but probably few of them have gone beyond the promoter stage. At least one new automobile factory will be operating in New England next season. A large amount of new industrial building will be done in 1910, and not a little of it will begin this winter. New England industrial stocks continue to strengthen, and the New Year's dividends will total larger amounts than for several years.

Credits are being scanned more carefully. An inclination to grant extended time had come with the eagerness to get business when the market was dull. This has been true with some dealings with the automobile industry, though not to any extent in the New England territory. The machinery lease has come into more common use than three years ago, as security in preference to notes where credits are unknown, or known to be doubtful. But conditions are now changing, and business is approaching a cash basis again. Large concerns are asking discount for cash, and some smaller customers are equally eager to save costs of equipment by immediate payments. It is strongly apparent that the manufacturing industry in general has weathered the depression without serious impairment of its financial resources.

Where boards of directors appropriate large sums for the purchase of machinery, the effort is sometimes made, stimulated by members of the board who are unfamiliar with the situation, to eliminate dealers' commissions by going direct to the manufacturers. In some lines of business this would be possible. But where machine tools are sold through dealers under the present system of exclusive territorial rights, or even where the builder recognizes several dealers in the same territory, it is generally useless for a buyer to go to him. The price will be the same. The dealer will get his commission. If the machinery builder markets his own product, independent of the agent, no concession is to be hoped for, or, at best, no concession which could not be obtained as easily from a dealer. The latter may be able to be even more liberal should it come to taking used machinery in part payment, a legitimate transaction enough, and one not antagonistic to the policy of maintaining list prices. A machine tool price has come to be an unelastic quantity with most machinery houses, both builders and dealers, especially when times are good. The wise buyer will do his saving by placing his orders early and thus avoiding increases in price, which may approach in amount the margin of dealers' profits in the present market.

The General Electric Company, Lynn, Mass., does not propose to proceed with the work of enlarging its plant this fall, excepting that it will put in the foundations for an extension of a building, 300 ft. long, which will be devoted to the small motor department, and which will be completed next spring. The Lynn Works are operating at full capacity.

Inquiries received by the trade indicate that the International Steam Pump Company will purchase new equipment to the value of \$500,000, with funds obtained by the sale of new securities now being placed on the market. A considerable percentage of the equipment will be installed in the New England works of the company, at Cambridge and Holyoke, Mass.

Karl Andren, Boston, Mass., dealer in steam and electrical apparatus, new and second hand, has established his sales office at 16 State street. His machine shop and warehouse will be located in the Vermont Building, Thatcher street.

The Connecticut courts have authorized the sale of the plant of the National Steel Foundry Company, New Haven, Conn., which was one of the constituent companies of the National Steel & Wire Company. The foundry has open hearth furnaces of large capacity for the class of work for which they were intended. The receivers, F. B. Farnsworth and H. Stuart Hotchkiss, New Haven, made an attempt to sell the property last year, but no satisfactory bid was received, because of the general business conditions then prevailing.

A new corporation, the Williams Sealing Company, has been organized in Connecticut with authorized capital stock

of \$100,000. It is understood that a factory will be established at Waterbury for the manufacture of a new bottle cap. The officers named are John H. Goss, president; George A. Williams, treasurer; N. R. Bronson, secretary. Messrs. Goss and Bronson are residents of Waterbury, and Mr. Williams is a Cleveland man.

The Screw Machine Products Company and the Metal Products Company, Providence, R. I., have completed and occupied their new factory at South Providence. The main building has 200 ft. frontage on Thurbers avenue, with central portion two stories high and 80 ft. square, the remainder one story and running back in two wings 60 x 175 ft. Between the wings, at the rear, is a storehouse 50 x 150 ft. The Screw Machine Products Company is developing a general line of fine machine screws.

The Boston & Eastern Electric Railroad has submitted to the Massachusetts Board of Railroad Commissioners and the Boston Rapid Transit Board general plans for the construction of a new electric railroad system, which would connect Post Office square, Boston, with the cities of Salem and Beverly, the project including a tunnel under Boston Harbor, between the city proper and East Boston. It is proposed, if the necessary permission is granted by the State Legislature, to build a road capable of handling a very large regular traffic, it being claimed by the promoters that the district covered is the most densely populated for its area in the country. Forty trains in each direction an hour, carrying 15,000 passengers, is the capacity planned for the tunnel.

Late announcements of enlargements of general manufacturing industries include the following: Arlington Mills, Lawrence, Mass., addition to No. 4 cotton mill, 100 x 140 ft., four stories and basement, to cost, with equipment, \$150,000; Haitch Hat Company, Danbury, Conn., new plant on Still River, where a water privilege has been purchased; Fitchburg Duck Company, Fitchburg, Mass., addition, 40 x 65 ft., one and one-half stories; Bourne Mills, Fall River, Mass., addition to No. 1 mill, 40 x 105 ft., one-story; Army & Navy Duck Company, Wilkinsonville, Mass., dye house, 40 x 100 ft. The Apponagansett Company, New Bedford, Mass., a new corporation capitalized at \$500,000, will establish new cotton mill. James E. Stanton, Jr., is the head of the enterprise.

Armour & Co., Chicago, are to erect a refrigerating plant, 101 x 111 ft., at Bangor, Maine.

The Richard French Iron Works, Worcester, Mass., manufacturer of architectural iron work, has begun work on its new plant, which will consist of a building, 50 x 100 ft.

The Worcester Electric Light Company, Worcester, Mass., has purchased the property of the Curtis Mfg. Company on Curtis pond, comprising 8 acres of land, including the rights in the pond which covers 80 acres. It is proposed to establish a main generating plant on the premises, using the present power house as a distributing station.

The International Silver Company will erect a new building at its factory, Wallingford, Conn., to be 30 x 100 ft., and two stories. It will be devoted to the sterling silver department.

The F. B. Shuster Company, New Haven, Conn., has brought out a larger size of the helix coiling machine described recently in *The Iron Age*, to take ¾-in. stock, making coils 40 in. in diameter. The company has supplied for the French and German plants of the International Harvester Company two of its automatic wire straighteners and cutters and two elastic rotary blow riveting machines. The company's shops are now running nights on an order from the American Steel & Wire Company for four automatic sheet metal straighteners and cutters, for handling metal up to 14 in. wide, straightening it and cutting it to length. Three of these machines had already been furnished.

The Standard Machinery Company, Providence, R. I., has brought out a new draw bench, having the capacity to reduce solid steel rods 1 in. diameter and steel tubing 2 in. diameter, at 1-16 in. at a draw. The bench has several important features, including parallel jaw, tongs and quick return. The company has recently filled an order for these machines for the Japanese government. The company has also put on the market a new hand press, in which the standard spindle control of the sensitive drill press has been applied. The machine is designed for use where extreme sensitiveness is required, as in glass work.

The Waltham Machine Works, Waltham, Mass., have brought out an improved type of automatic gear cutting machine, designed to cut steel gears and pinions of fine pitch, though adapted specially for cutting brass gears, complete protection from chips being given to index, cams, slides and other parts. The machine is built in two sizes, the smaller cutting gears up to 1¼-in. diameter, 32 pitch in brass, and 48 pitch in steel, the longest stroke of the work slide being 1½ in. The larger size cuts up to 3 in. diameter of 24 pitch in brass and 32 pitch in steel, with a maximum stroke of 3 in. The Waltham Machine Works has also brought out a new automatic staff turning machine, designed specially for turning several shoulders on small work, such as staffs of watches and clocks. The tool will cut either straight or taper, or straight and tapered, or a series of different tapers, as determined by cam forms. With two-

tool turret, two cuts are employed, for roughing and finishing, the turret indexing automatically for the finish cut. The machine is made to take either rectangular or circular tools. Its capacity is $2\frac{1}{2}$ in. between centers, but the longest total turning is $1\frac{1}{2}$ in.

Philadelphia Machinery Market.

PHILADELPHIA, PA., October 26, 1909.

A decided increase in the volume of inquiries coming to the merchants and manufacturers of machine tools is noted. Not only has the number been greater, but their character is better, some calling for a number of tools for small and moderate sized shop equipment. The most important demand comes from the automobile builders, the equipment of several moderate sized plants being under consideration. The larger users of tools also begin to show signs of coming into the market more extensively. The Bethlehem Steel Company has inquiries out for a number of extra heavy tools. In the majority of cases purchases have not yet been definitely decided upon. Several of the Eastern railroads have placed quite heavy orders for rolling stock and motive power, and car builders are pretty well supplied with orders, while the locomotive builders are steadily becoming more active. The Baltimore & Ohio Railroad has, it is reported, been one of the extensive buyers of both cars and locomotives in the past week. The possibility of a car shortage is believed to be largely responsible for the increased purchases of the railroads recently, as several roads are already experiencing a greater demand for cars than they are able to meet satisfactorily. There appears to be more likelihood of purchases of machine tool equipment by some of the railroads, who are understood to be looking into their requirements, but have as yet announced no programme.

Sales during the week have been mainly of a miscellaneous character. Here and there a somewhat better aggregate volume of business is reported, although orders are still largely in the nature of single tool propositions. Special tools have been fairly active; more so, in some instances, than those of the usual standard types.

Manufacturers continue to take on a fair volume of business, which, measured month for month, shows a steady gain. In nearly all cases larger forces are employed, although a scarcity of good mechanics continues to be noted. The bulk of the orders still originate outside of this territory; in some few instances a slight betterment in local and territorial business is reported. The foreign demand shows no betterment; inquiries for standard tools are light, but a scattered business is reported in tools of a special nature. About an even demand is reported by manufacturers doing a regularly established business abroad in power transmission specialties.

The second-hand market has been a trifle more active. The business transacted has been of a varied character, covering a wide range of metal and woodworking tools and special machinery. Second-hand engines are inactive; a fair demand, however, is reported for second-hand boilers. A very fair volume of business comes out for new power equipment, particularly that of a medium capacity. Boiler makers are actively engaged; engine builders, however, are, as a rule, not operating up to full capacity.

A moderate betterment is noted in some branches of the foundry trade. The steel casting plants are steadily increasing in activity, and prompt deliveries are not so readily to be had. The heavier gray iron casting plants are somewhat better engaged, while those making lighter work are fairly active. Founders making machine tool castings report a better run of orders, while jobbing plants are active. Few important casting plants in this territory are yet running at normal capacity.

The Seaboard Steel Casting Company, Chester, Pa., is making extensions both to its foundry and machine shop, which will increase the capacity of the plant about 40 per cent. In connection with these improvements, the company is in the market for an electric crane, a shaper, cold saw, planer and probably a boring mill.

The Craig Ridgway & Son Company, Coatesville, Pa., is doing a good business in steam hydraulic machinery. Orders for elevators are coming in from day to day, and there is a considerable inquiry noted. While there is but a fair amount of business ahead, the prospects for an active year in 1910 are considered favorable.

The City Council of Collingswood, N. J., has approved of the plans of the Citizens' Water Committee to install a municipal water plant, and will authorize a special election, to be held at an early date, to vote on the project of issuing bonds for \$135,000 to be applied to the erection of such a plant.

F. W. Lorenz, for a number of years connected with the Prentiss Tool & Supply Company, New York, and E. T. Mathewson, recently of the Spooner-Mathewson Company, New York, are now in charge of the machinery department of the Fairbanks Company of this city. A. G. King, for-

merly of the Spooner-Mathewson Company, New York, is also associated with the same department.

The New York Shipbuilding Company, Camden, N. J., is understood to be in the market for a machine tool equipment for a vessel under construction, also several tools for its own use, particulars regarding which are not yet available.

Daniel Nast, until recently in charge of the machinery department of the Fairbanks Company, has opened an office at 368 Bourse Building, this city, and will transact a general machinery business under the name of the D. Nast Machinery Agency.

The Water Committee of the Camden, N. J., City Council has instructed the chief engineer, Robert Hollingsworth, to secure estimates on the probable cost of an auxiliary water supply for manufacturing purposes, as well as for fire protection in the business districts of the city. The place under consideration embraces the utilization of the city's old Pavonia water plant, using water from the Delaware River.

The Department of Supplies, City of Philadelphia, will open bids November 1 for various supplies required during 1910. The following are included: Under class I, iron and steel; class J, bolts, nuts, rivets, washers and screws; class S, cast iron water pipe and pipe castings; class V, iron, brass, steel and grate bar castings, expansion and babbitt metal, lead coating, feed troughs, iron vases; class X, brass pipe, fillings, bibbs, cocks, valves for steam and water, hose couplings and nipples, gauge glasses, lubricators, oil and grease cups. Full information regarding the above supplies, specifications, &c., may be obtained on application to the director, Joseph H. Klemmer, rooms 310-312, City Hall.

The Ferracute Machine Company, Bridgeton, N. J., advises us that, notwithstanding some increase in its equipment, it is operating its plant night and day to keep up with orders recently booked. This company is now building some very large presses, of which at least one will probably exceed in size anything yet produced in its class. The demand from abroad is normal, the main increase recently being in domestic orders. The working forces of the plant, particularly machinists for bench work and die makers, are steadily being increased.

The erection of a power plant in the spring, with steam turbine and dynamo as the electric generating unit, is contemplated by the new Board of Directors of the Wilmington & Westchester Railway, Westchester, Pa.

Chicago Machinery Market.

CHICAGO, October 26, 1909.

In so far as the demand for machine tools is a reflection of expanding activity in manufacturing industries, it is safe to say that the rate of progress toward full engagement of shop activities in iron and steel working mines indicates steady gains. Complaint is made in some quarters that prices of finished products are not keeping pace with the rise in raw materials, advance in wage scales and other factors tending to increase cost of production. At the same time reports agree that, while it would be a mistake to characterize the present movement as a boom, the general volume of business in manufacturing plants is by comparison with conditions a year ago greatly improved and continues to grow. The degree of betterment and the prospects ahead are such that many users of machine tools who have until recently given the matter of new equipment no particular thought are coming into the market with inquiries. The sources from which these come are constantly widening, a fact that bespeaks a more general interest among buyers; and it may be said that the drift in this direction is not indicated alone by inquiries, but is manifested as well in the larger number of orders being placed. That a good many buyers have deferred making purchases until the last minute is evident from the receipt of frequent hurry-up orders. Ability to make prompt delivery of tools is now quite often the determining factor in securing business. General shop tools, such as lathes, planers, shapers, &c., can usually be promptly supplied, though a few factories in these lines are well filled up and are beginning to run behind. Orders from the railroads for small lots of tools are more numerous, the aggregate being larger than at any time in the past two years.

The Elkhorn, Wis., municipal light and water plant is to be enlarged by an addition, 24 x 40 ft., for which improvement and its equipment contractors and manufacturers are requested to submit bids on or before October 29. New pumping machinery will be required, together with an air compressor of double the present capacity.

The Pilot Motor Car Company, Richmond, Ind., has been incorporated with a capital stock of \$100,000. It is the intention of the company to occupy a large manufacturing plant at that place, now vacant, but which will be fitted up with equipment for assembling purposes only. This equipment, it is stated, has not as yet been purchased.

The Sylvester Company, Spokane, Wash., constructing engineer, has been awarded the contract for the construction of the power plant which will operate the Lehigh Valley Cement Company's plant to be built at Metlatine, Wash., on the Pend d'Oreille River. The power plant, which will cost approximately \$350,000 and will develop 10,000 hp., will be located at the confluence of Sullivan Creek and the Pend d'Oreille River, just above Metlatine Falls, and the cement plant, which will have a capacity of 2000 barrels per day, will be located at the same place. Work on the construction of both projects is already under way, and it is expected that the power plant will be completed within 10 months.

The Reinforced Concrete Pipe Company, Jackson, Mich., is erecting a new plant at Detroit for the manufacture of forms, molds and machinery to make reinforced concrete pipe. The building will be constructed of reinforced concrete, and the interior will be fitted with electric power equipment, electric traveling crane for handling large and heavy castings, and a considerable amount of wood working machinery, and will when completed represent an expenditure of approximately \$75,000. It is stated that contracts have already been placed for most of the equipment required.

The Armstrong-Quam Mfg. Company, Waterloo, Ia., which on January 1, 1909, succeeded the Kelly & Taneyhill Company in the manufacture of well and oil drilling machinery and supplies, gas and gasoline engines, &c., has recently increased its facilities by the installation of modern equipment of machine tools. Several new well drilling machines of improved design have been lately developed and added to the company's line of such equipment. Comprehensive catalogues covering the lines manufactured by the company are in course of preparation, and will soon be ready for distribution.

The D. H. Lawrence Company, Sterling, Ill., manufacturer of the Pitner pump, has moved into new quarters, affording more than double the space heretofore occupied. New features have been added to the pumps and connections made by this company, the principles of which it is expected will later be embodied in cheaper pumps for bicycles, spray pumps and even water pumps. While heretofore only assembling work has been done, arrangements are being made to manufacture the product in the plant.

Plans of the Joliet Steel Car Mfg. Company, Joliet, Ill., have so far developed that it is now stated that the work of construction of a new plant for the manufacture of steel cars will probably be begun before the first of the year. One of the new cars of the type which it is proposed to build in these works is nearing completion in an Eastern shop, and will be ready for demonstration in a short time.

Cleveland Machinery Market.

CLEVELAND, OHIO, October 26, 1909.

The local machinery market has been more active the past week than during the first half of the month. Dealers report a good volume of small orders for small and medium sized standard tools, and a large number of similar inquiries are coming in. The heaviest demand appears to be for lathes and drilling machines. There is also a good demand for boring mills. The demand for planers and other tools not used in the automobile trade shows an improvement. Small machine shops are now buying machine tools quite freely. During the period of depression when other business was lacking the majority of these shops turned their attention to making automobile parts, which they found a profitable line of work, and which they are keeping up now that the demand for other lines of machine shop work has become more active, and many of these shops are now finding it necessary to add to their equipment. Although the establishment of garages with small repair shops in connection has created considerable demand for small machine tools during the past year or two, this business does not seem to have been overdone. Many new garages are springing up and the demand for machine tools from this source is now quite active. The general demand for machinery for industrial plants of various kinds shows an improvement, and among the inquiries are two fairly large ones from local plants. Many new industries in metal working lines are being established and the demand for machinery to equip new plants is gradually improving. In power equipment the demand for small motors continues quite active.

The demand for second-hand tools is very good, but the supply is quite limited.

Local manufacturing plants in metal working lines are all quite busy, and some are so crowded with orders that they are running overtime. Plants making all lines of brass goods have become very busy and skilled labor for that class of work has become quite scarce.

The Brown Automatic Hose Coupling Company, recent-

ly organized in Cleveland with a capitalization of \$30,000, will manufacture an automatic hose coupler for hose for air, oil, steam and water, the invention of E. L. Brown. The company will start a manufacturing plant at St. Clair avenue and East Seventieth street, and will purchase a small amount of equipment. The officers of the company are: P. L. Andrews, president; E. L. Brown, vice-president, and Charles Eisele, secretary and treasurer. The company has offices at 218 Superior Building. Some of the couplers are in use in Panama Canal work, and are said to be giving the highest satisfaction. The company has received some good orders from railroads.

The Peerless Ice Machine Company, a recently formed Cleveland concern, has established a plant adjoining that of the Browning Engineering Company on Sackett avenue in Collinwood for the manufacture of ice making machinery. J. A. Kling is president of the company and J. F. Miller is secretary and treasurer. They were formerly at the head of the Cleveland Builders' Supply Company. The new plant consists of a foundry, 40 x 60 ft.; a machine shop, 60 x 120 ft.; a pattern shop, 20 x 40 ft., and a blacksmith shop, 30 x 36 ft. The company is capitalized at \$100,000.

The Kelley Reamer Company, Cleveland, has been incorporated by William E. Kelley and others, with a capitalization of \$25,000, to take over the business of the Kelley Tool Company, maker of the Kelley floating reamer. The company has leased quarters at 522 Prospect avenue, N. W., where it will establish a plant for the manufacture of boring bars and special reamers, and other lines will be added from time to time. The company is in the market for a small amount of machine tool equipment.

The directors of the Diamond Rubber Company, Akron, Ohio, decided at their recent annual meeting to further enlarge their plant by the erection of two buildings to make room for the automobile tire, insulated wire and mechanical goods departments. One large building is now being erected, which will be ready for occupancy about January 1.

The Rummel Machine Screw Company, Cleveland, has been incorporated with a capitalization of \$20,000 by Richard E. Rummel and others. The company has established a plant at Keyes and Edwards streets for the manufacture of screw machine products. The company is in the market for several screw machines. R. E. Rummel is president and H. C. Leeseberg secretary.

The Grant-Lees Machine Company, Cleveland, Ohio, has increased its capitalization from \$100,000 to \$150,000 for the purpose of enlarging its plant to accommodate its growing business. Plans for additions have not yet been completed. The company is now devoting its activities almost wholly to the manufacture of gears and is crowded with automobile work.

The Ohio Blower Company, Cleveland, reports a steady improvement in orders, the demand for its steam specialties in particular showing a decided improvement. The company states that its business this month will be 200 per cent. greater than in the corresponding month a year ago.

The village of Amherst, Ohio, will enlarge its municipal electric lighting plant, and is in the market for an engine and a 1000-kw. generator.

The Trenkamp Stove & Mfg. Company, Cleveland, has finished the erection of its new plant and has started the manufacture of water heaters. About November 1 the company will begin the manufacture of a full line of gas stoves and ranges.

The Cleveland office of the Allis-Chalmers Company has just received an order from the Diamond Rubber Company, Akron, Ohio, for a 1500-kw. turbine and condenser.

The Ashland Novelty Company, Ashland, Ohio, has been incorporated with a capitalization of \$25,000 by Charles M. Wilson, L. M. Helbert, F. V. Dotterweich, J. B. Sigler and M. V. Semple. The company will establish a plant for the manufacture of automatic sewing machines and other products.

Reports from Ironville, Ohio, state that the Monarch Mfg. Company, of that city, maker of lubricating oils, &c., will erect three new buildings, one of which will be a tin can factory for the manufacture of cans for the company's own use.

The Parr Regrinding Globe Valve Company, Cleveland, has changed its name to the Parr Valve Mfg. Company and has increased its capitalization from \$10,000 to \$20,000.

The Warren City Tank & Boiler Company, Warren, Ohio, will greatly increase the capacity of its plant by the erection of a steel building, 150 x 200 ft. The work on the foundations has commenced and the new switches for the large addition are being put in by the railroad companies. Only two years ago this company enlarged its plant, increasing its capacity to such an extent that it seemed at that time that any further extensions would be unnecessary. However, the company's business has grown so rapidly that, owing to the present crowded condition of its already large plant, another large addition has become necessary.

Cincinnati Machinery Market.

CINCINNATI, OHIO, October 26, 1909.

It has been a week of unusual interest in machinery and machine tool lines. Deliveries on standard tools are from 30 to 60 days behind, and the situation grows more complex daily, caused chiefly by the difficulty experienced in getting available men for skilled work on this class of machines. During the week some figures were given out by Secretary John M. Manley of the Cincinnati branch, National Metal Trades' Association, showing conditions of payrolls by epochs of three months, commencing June 15, 1907, the time when all shops were working to their utmost capacity, and really under abnormal pressure. This high tide of operative industry was taken as the basis of computation, or 100 per cent., and each three months thereafter a careful record was made. This record, brought down to the last quarter of 1909, indicated conditions in the Cincinnati tool manufacturing district, calculated by number of operatives employed, as follows:

	Per cent.		Per cent.
June 15, 1907.....	100	September 15, 1908.....	53
September 15, 1907.....	97	December 15, 1908.....	56
December 15, 1907.....	85	March 15, 1909.....	62
March 15, 1908.....	67	June 15, 1909.....	65
June 15, 1908.....	56	September 15, 1909.....	72

The Cincinnati branch is one of the most important organizations of employers in the United States, with about 12,000 employees on the payroll. The 68 large concerns making up its membership are distinctly representative of the tool making lines. It will be observed that September 15, 1908, represented low water mark; while up to that time the tide was receding, the recovery began shortly after, and has been steady and constant ever since. The point has been made that the pace of the four quarters since and representing recovery has not been as rapid as was the decline, and that, while September 15, 1909, should have shown approximately 100 per cent., it has reached but 72. The reason for this apparent unreasonable discrepancy from the acknowledged rapidly improving trade conditions and crowded order books is due to encroachments of the automobile manufacturers of the Middle West, who have taken the expert tool maker at greatly enhanced wages to work in the motor building shops. Nearly every tool builder here could use more skilled workmen than he has employed; and the scarcity of the right kind of tool making labor is more marked than at any time for many years. To this scarcity of the right kind of labor and the consequent effect of the automobile builders' higher wage scale also was due the insistence of the Western tool builders at the national convention in New York recently on the price question. The matter was placed in the hands of a committee for investigation and report, and conditions as they exist in the Middle West will be submitted to this committee.

The question of freight rates has also been up during the week. At a meeting of the Executive Committee of the National Tool Builders' Association the attitude of the shippers of the country in resisting the proposed advance in freight rates was heartily indorsed, and a resolution adopted which will afford the latter the moral and financial support of the local branch in their fight. The Metal Trades' Association members put themselves on record as denying any condition in the trade which would warrant an advance in rates at this time.

The quarterly meeting and dinner of the Cincinnati branch will be held on the last Thursday in November or the first in December, the date to be determined definitely to permit of the attendance of some men of note in governmental affairs, among whom is expected the Japanese Ambassador at Washington.

Receiver William B. Melish of the Steel Foundry Company announces the sale of the property. He withholds the name of the buyers. He says: "The publication of the name of the buyers would precipitate upon them and me a deluge of correspondence that would be inconvenient to handle at this time; so we prefer to allow the purchasing interests to give it out. They are men of consequence in the iron and steel world, and have ample capital to develop and conduct the plant in a first class manner. There will probably be an increase of capital, and the property will be run as a steel foundry; both furnaces will be used; one will be rebuilt. It is expected to begin operations by January 1. For the property remaining in the receiver's hands it is reported from another source that \$75,000 was realized. Originally the foundry plant cost considerably over \$100,000, with an expenditure of almost another \$100,000 for equipment. It has lain idle for two years, and in the interval the receiver has paid two dividends of 10 per cent. each. At one time it was thought that a Chicago interest had acquired the property, but this deal fell through. The company which built the plant was composed of William Lodge, president; Franklin Alter, vice-president; W. H. Stewart, secretary, and J. C. Hobert, treasurer. The re-

ceiver, Melish, expects soon to declare a very substantial dividend.

With an informal reception, luncheon and dance the handsome new home of the Triumph Electric & Ice Machine Company at Oakley was dedicated by employees and officials October 23. The new building is 300 ft. long, and ultimately another 300 ft. addition is to be added on the northern end. Two spacious aisles or galleries on each side of a big amphitheatre space of 140 ft., running the entire length, afford plenty of space for setting up and loading on cars with electric traveling cranes the heaviest kind of shipment with ease and dispatch. The arrangements for the reception were made by a committee of employees. Speeches were made by President James C. Hobart, W. N. Hobart and R. V. Fink.

Chairman William B. Melish of the Cincinnati committee which is to welcome and entertain the Japanese commercial commissioners on November 7 and 8 announces that the local entertainment will partake more of the artistic and social. The 8th will, however, be given up principally to tours through the larger tool establishments, such as are turning out specialties and which may not be seen elsewhere in the country.

The representative tool manufacturing establishments report business thus far for October about the same in volume as for September. Lathes continue in strong demand, one large concern having received several hurry orders on small lathes from automobile makers, some medium sized from the Pittsburgh District, and a large 42-in. swing, with 42-ft. bed, from St. Paul.

The Smith & Mills Company, manufacturer of shapers, reports an unusually uniform business for the past four months, the orders aggregating about the same in volume. Of late some very nice business has come from Europe. The 20 and 26 in. shapers are in best demand, and the inclination seems to be for the larger and heavier sizes.

In the line of engineering specialties and brass goods for heating systems all concerns report orders increasing, particularly in the heating system specialties. The heavier domestic business comes from the South and Southwest.

The local foundry melt is now nearly normal; in some plants it has reached the abnormal proportions of early 1907. Many more concerns are ordering castings for stock than is usual under the circumstances.

The United States Motor Truck Company is a new corporation for Cincinnati. The officers are: Alfred Hill, president; Herman Erdmann, vice-president; Jesse Lowman, secretary, and Harry L. Manss, treasurer. The company will build a factory and is now making a choice from three available sites. It is said to have orders already for a number of trucks.

To-day a large number of guests of the Cincinnati Industrial Bureau are spending the day on a special train furnished through the courtesy of the Norfolk & Western Railroad, visiting large plants in the northeastern manufacturing district of the city. Among the plants to be visited are the new home of the Pfau Mfg. Company in Norwood, manufacturer of high grade plumbing supplies, whose main factory is 310 ft. long by 50 ft. wide, four stories, with a foundry 60 x 70 ft.; planing mill 50 x 100 ft., and power house 32 x 80 ft.

Milwaukee Machinery Market.

MILWAUKEE, October 26, 1909.

While reports from different sources are somewhat at variance, business during the latter half of this month does not appear to show the same percentage of gain that characterized the eight or nine weeks preceding. Values, however, are generally higher, and there is a strong undertone to the market. Manufacturers of machine tools, engines, electrical apparatus, cranes, hoists, compressors and special industrial machinery of every description are notably active; and all who have been interviewed report more inquiries than their estimating men can promptly handle. Prospective purchasers must, therefore, allow for some delay to answers in cases where the equipment desired is not of the absolutely standard or "catalogue" variety; and in this connection it may be observed that the tendency of machinery users in many lines is to get farther and farther away from such standards. Something special in the way of equipment, even though it adds considerably to the cost, is very frequently—one might say ordinarily—demanded.

The increasing difficulty of obtaining sufficient skilled labor in certain lines of the metal working industries is becoming quite a problem here and threatens to reach an acute stage in the near future. There never was a time in the history of this section when manufacturers of automatic, semi-automatic or other labor-saving machinery had better opportunity of introducing their apparatus in all parts of the Northwest. One machine in successful operation sells many others. Each installation that possesses features of novelty or special interest soon becomes known to super-

intendents of plants in the vicinity; and, so far as the writer of this report has observed, there is little or no disposition to keep a knowledge of the workings of such machines from others, even though they be competitors. In making sales, photographs of existing installations, with rather complete descriptive titles, will be found more effective in this part of the country than any quantity of catalogue matter.

Owners of steel foundries in this section who congratulated themselves not long ago on the securing of large, long-time contracts for standard machinery parts are very generally regretting the fact that they have their plants practically filled, as considerable business is now being offered at much better prices than were formerly obtainable. Few of the more important concerns are at present in a position to take orders of any size, and the result is certain to be not only an increase in equipment but also the rapid upbuilding of numerous small foundries, some of which are already straining every resource to develop their facilities. During the next 8 or 10 months at least Wisconsin and neighboring States will offer an attractive field for the sale of apparatus used in steel foundries. The same thing is probably true with reference to iron foundries; but the outward signs of activity are not as manifest. On the subject of brass, aluminum and special alloys plants much has heretofore been said in this report, and the indications of material growth still obtain in cumulative measure.

Kearney & Trecker are having plans drawn for an addition to their works at West Allis, Wis., 160 x 260 ft., costing approximately \$100,000. This extension is urgently needed.

An unusually large boiler capacity will be provided for the State Normal School at Stevens Point, Wis. The Weinberg Construction Company has the general contract.

An electric power plant and pumping station will be built in the near future by the city of Crandon, Wis., bonds having already been issued for the purpose.

Plans for an addition to the city pumping station at Shawano, Wis., are being made by Engineer W. G. Kirchhoffer, Madison, Wis.

New boilers will be installed in the plant of the Gould Mfg. Company, Oshkosh, Wis., which will be remodeled for the additional equipment necessary.

The Columbia Silica Company, Portage, Wis., whose plant, including pressure cylinders, boilers, &c., was recently damaged by fire, will erect a new building having steel trusses and galvanized roof. Some new equipment will also be needed.

The Morgan Company, Oshkosh, Wis., will erect a three-story steel frame addition and install some new machinery, including woodworking tools, motors, exhaust fan and possibly electric generating unit. The Worden-Allis Company, Milwaukee, has the steel contract.

The Sterling Construction Company, Milwaukee, is putting up three four-story buildings for the Lewis Knitting Company, Janesville, Wis., which will be electrically operated and protected by a sprinkler system.

Boilers of about 2500-hp. capacity, a large line of motors, exhaust fans for dust removal system, conveyors, planing mill machinery and other apparatus will be bought in about two weeks by the Paine Lumber Company, Oshkosh, Wis.

The Harvey Spring Company, Racine, Wis., will have plans prepared in the near future for an addition to its plant, including probably the installation of a new boiler and power equipment of increased capacity.

The Worden-Allen Company is erecting the additions to the Allis-Chalmers Company's works at West Allis, the new blacksmith shop being farthest advanced.

A blower system, 10 to 15 electric motors, freight elevator, &c., will be needed in equipping an addition to the plant of the Wilder Brothers' Tanning Company, Waukegan, Ill.

George Seelman will erect a large building for light manufacturing at Seventh and Chestnut streets, Milwaukee. Boilers, heating apparatus and probably an electric power plant will be among the requirements.

The Hydes Electric Power Company, Oshkosh, Wis., is purchasing electrical apparatus for its power plant at Ellis Junction.

Kenfield & Lamoreaux, Washburn, Wis., will require some additional power and box making machinery for an addition to their factory, work on which is to be started in the near future.

The La Crosse Water Power Company will undertake a further hydro-electric development as the result of plans to construct an interurban railroad from Winona, Minn., to Sparta, Wis.

Advices from Niagara Falls, N. Y., state that the Allis-Chalmers Company of this city has been awarded contract for the six electrically driven pumps to be installed in the new water works station.

The Christensen Engineering Company, Milwaukee, is making large sales abroad of air compressors and other apparatus of its manufacture.

A new competitor for the equipment of industrial plants in this State is the Mechanical Power Company, recently

organized at St. Paul, which will make a specialty of boilers, pumps, engines and electrical machinery.

A modern plant for the remelting of scrap metal will be built at Sheboygan, Wis., by Locke & Goodstein.

A producer, gas engine and electric generator will be required for the new factory of the Badger State Shoe Company, Madison, Wis., recently mentioned in this report.

The works of the Nordberg Mfg. Company, Falk Company, Pawling & Harnischfeger, Kempsmith Mfg. Company, Vilter Mfg. Company, International Harvester Company, Power & Mining Machinery Company and the Allis-Chalmers Company, besides the Milwaukee School of Trades, were visited during the past week by the senior class in engineering of the University of Illinois.

The Constantine Mfg. Company, Madison, Wis., is still undecided regarding the type of prime mover to be adopted for its new plant; but the probabilities favor a producer gas engine. An additional line of electric motors will be required for driving the machinery.

The Wisconsin Bridge & Iron Company, Milwaukee, has been awarded contract for a steel bridge over the Turtle River, near Juda, Wis.

Peter Kutch, Crivitz, Wis., will be in the market shortly for power apparatus to be used in a new mill, the plans for which are being prepared.

Machinery for a 50-ton concentrating plant to be erected at the Kohinoor-Blende Company's mine in Platteville, Wis., will be purchased this winter. An air compressor and hoist are also among probable requirements of the near future.

The Logemann Brothers' Company, Milwaukee, has sold the International Harvester Company compound, triplex pressure pumps, with automatic cut-out for the high pressure cylinders, to be used in the French and German plants of that company in connection with wheel presses.

Claude A. Tupper, a mechanical and electrical engineer of this city, employed by the Allis-Chalmers Company as manager of sales promotion, who was recently appointed chairman of the harbor and shipping committee of a local advancement association representing the principal metal working district, has inaugurated a movement to have special provision made for handling ore, pig iron, coke and coal across the new municipal docks proposed for Jones Island, the plans of which are now being worked out in the City Engineer's office by Isham Randolph of Chicago.

Trade Publications.

Steam Engine Indicators and Appliances.—Trill Indicator Company, Corry, Pa. Catalogue. Size, 6 x 9 in.; pages, 44. Describes the various types of Triumph steam engine indicators, Faultless reducing wheels, planimeters and indicators for high pressure and ammonia work. Besides descriptions and illustrations, discussions are given on numerous cards and the causes of various unusual curves pointed out. A method is explained for drawing adiabatic and saturation curves. A chapter is included on indicating gas engines, with discussions of faulty diagrams and a chapter on indicating compound engines and drawing combined cards.

Vertical Gas Engines.—Bruce-Macbeth Engine Company, Cleveland, Ohio. Catalogue, 7 x 10½ in., 31 pages. Announces that the interests of the Bruce-Meriam-Abbott Company and the Macbeth Iron Company have been merged under the above name and the company is building a line of vertical gas engines for electric lighting, pumping and general power purposes. Arguments favoring gas engines as against other prime movers, substantiated by a cost table, serve to introduce the company's line of vertical engines, which operate on the four-stroke cycle, after which the more important parts of standard machines are shown and described, together with a cross section of a standard engine. Illustrations include a producer gas power plant equipped with a Meriam engine and engines of the two-cylinder type. An installation in the foundry of the E. R. Thomas Motor Company, Buffalo, N. Y., consisting of three 100-hp. engines direct connected to 62½-kw. generators is illustrated, with other installations, and some testimonials are included.

Lifting Magnets.—Electric Controller & Mfg. Company, Cleveland, Ohio. Catalogue, 6 x 9 in., 61 pages. Gives an extensive list of users of lifting magnets made by the company and contains interesting illustrations of magnets in use. Notable among these is a lifting magnet handling 18,000 lb. of steel ingots at the Homestead Works of the Carnegie Steel Company and a No. 6 type S. A. lifting magnet hoisting 36 billets weighing 12,240 lb. at the Edgar Thompson Works of the Carnegie Steel Company. Magnets are shown lifting scrap, bloom, crop ends, bars, castings, &c. The illustrations are excellent and clearly illustrate the adaptability of the magnet in handling all sorts of iron and steel raw and finished material.

Stove Lining and Asphalt Roofing.—H. W. Johnson-Manville Company, New York. Mailing card circulars. One deals with a dry stove lining and the other with the J-M Regal roofing, which is a smooth surface roofing made of Trinidad Lake asphalt. Return cards for ordering material are attached to each circular.

HARDWARE

A CORRESPONDENT in New England, referring with approval to the editorial comments on Special Brands in our last issue, makes three points which are deserving of consideration: **FIRST**, that when a jobber sells Special Brand goods he poses as a manufacturer; **SECOND**, that he cannot possibly put the integrity back of the goods that the manufacturer can; and **THIRD**, that the jobbers always have complained and will complain bitterly of a manufacturer who does a jobbing business. If in connection with the jobbers' Special Brand there were a label indicating that the goods were made for the jobber by such and such a manufacturer it would be a truthful and sufficient statement. Little objection could be made to such private brands. The jobber certainly while controlling the brand would not be posing as a manufacturer. The integrity of the goods, too, in that case would thus be vouched for by both manufacturer and jobber. Such a marking would recognize the relations in which manufacturers and jobbers theoretically stand to each other. When it is consistently recognized as the province of the manufacturer to make the goods and of the jobber to distribute them there will be avoided the unpleasantness which is felt, on the one hand, when the manufacturer invades the jobber's field, and, on the other hand, the displeasure which the maker of the goods feels when the jobber poses as manufacturer of them.

The Jobber as Manufacturer

That small things are not to be scorned is emphasized by recent official statements regarding the

The Growth of Toy Trade

Toy trade, which is of direct interest to Hardware merchants and manufacturers, in view of the fact that Toys, so many of which are metal, are finding increasing place in the stores of those who give attention to the cultivation of holiday trade. It appears that in the past decade the importations of Toys into the United States amounted to no less than \$50,000,000, while the exports in the same period reached about \$5,000,000. In the fiscal year ending June 30 last our export trade in such articles established a new record, for the first time exceeding \$1,000,000 in value. On the import side the high-water mark was reached in the fiscal year ending June 30, 1908, when the value of the Toys brought in was \$7,250,000, declining to about \$5,000,000 in the past fiscal year. The increase in the production of Toys is certainly a gratifying indication of the progress of manufacturing in this country even in a minor line.

Condition of Trade.

As the season advances there is a general increase of activity throughout the trade, all classes uniting in referring to the excellent conditions and finding themselves well occupied in taking care of current business. There is a good deal of diversity in the size of stocks in the warehouses of the manufacturers and in the stores of the retailers. Some manufacturers have, apparently, a good supply of goods on hand, but others are considerably behind their orders, a condition which causes some delay in shipment of goods. The jobbers generally are well supplied and only here and there running short. In some lines they are evidently fully stocked, having, like good merchants, purchased freely of goods which have since advanced. Some of them are marketing these goods at figures based on present costs, but many, as is usual in such cases, are shading prices more or less liberally, thus giving their customers the benefit of their judicious buying. Some irregularity is thus introduced in current quotations, a state of things which is not always agreeable to the manufacturers. With the retail merchants stocks are apparently of fair size and generally well assorted, as the condition of the market during recent months and their local circumstances have justified an energetic prosecuting of business.

One of the questions which is canvassed quietly among thoughtful men in the trade is in regard to the securing of the farmer's trade, and in many places there is a tendency toward the enlargement of the stock, with a special view to meeting his requirements. It is recognized as wise policy to do all that can be done to stand in well with the farmers, not only because they are important purchasers at present, but because with the prosperity they are enjoying, and likely to enjoy, they will be buying more and more of the better class of goods and be entering into many of the refinements of town and city life.

In the matter of prices there is little change to report. The tone of the market is strong and the trend is upward. Crude goods that lie near the raw material are of course, most affected, but there is a general toning up of quotations all along the line, except where special influences, sometimes in the form of unreasonable competition, sometimes in an effort to drive new concerns out of the market, force or keep prices down to an unnatural level. On the whole, however, the situation is very satisfactory as regards volume of business and tone of prices. October thus draws to a close, having made a fair record, even though the demand upon manufacturers and jobbers was not quite up to some too sanguine expectations. There is, however, a confident feeling in regard to the future, and November is looked upon as likely to be characterized by a wholesome and, it may be hoped, profitable trade.

Chicago.

Reports from all sections of the Hardware market indicate that trade is not only growing in volume, but that prices are being maintained with a more satisfactory degree of uniformity than has been the case for many months. This does not mean, of course, that absolute firmness characterizes all lines, but improvement is

everywhere apparent. The urgent need of orders necessary to supply factory plants with work enough to warrant their continued operation on even a reduced scale no longer exists, and the leading incentive to demoralization of the market has therefore to a very large extent ceased to be a factor in the situation. Values, in fact, are in the main gradually rising, a trend that is especially marked in iron and steel products, the cruder forms of which are scarce. The drift in this direction is emphasized by recent advances in Bolts, Nuts, Rivets, &c., and the slower deliveries of sheets and goods made from them. Difficulty is being experienced by jobbers in supplying Stove Pipe and Stove Pipe Sheets fast enough to meet the trade's requirements which are now very heavy. Late advices from manufacturers of Poultry Netting are to the effect that prices equivalent to those ruling at the opening of the season last year have been named for present bookings. The recent upward turn in Spelter, if sustained will likely be followed by a hardening of prices on the heavier lines of galvanized goods where the coatings form an appreciable percentage of the weight. Should this metal go still higher definite advances would be almost imperative in such lines. Another advance in Sheet Zinc announced last week makes the base price on No. 9 to 19 gauge, inclusive, \$8 per 100 lb. This represents an advance of 1½ cents per pound, or \$25 per ton, within the last four months. Due to sympathetic influences of a widening market, Copper goods are stronger in tone, but they lack the compelling impetus of active movement that might be expected to follow a firming up of ingot metal prices. The number and extent of building plans that continue to develop give promise of unabated activity in such construction. In addition to several new theaters of less pretentious size to be erected in Chicago in the near future, is a nine-story hotel and theater for which plans have been drawn and a site secured at 121-129 Clark street. Of the five bids tendered on the Builders' Hardware required for the new Chicago City Hall, the lowest was \$31,180 and the highest \$47,982. No formal award has at this writing been announced.

NOTES ON PRICES.

Wire Nails.—New business is being received in slightly increased volume by the mills, indicating that low-priced stocks in jobbers' hands are becoming exhausted. A circular letter has been received by the trade from a prominent manufacturer withdrawing quotations on Wire Nails, Barb and Fence Wire, but the market is still represented by the following quotations, f.o.b. Pittsburgh, plus actual freight to point of delivery, 60 days, or 2 per cent. discount for cash in 10 days:

Carloads to jobbers.....	\$1.80
Carload lots to retail merchants.....	1.85
Less than carloads to jobbers.....	1.85
Less than carloads to retail merchants.....	1.95

New York.—Business continues moderate, a normal quantity of Wire Nails passing from jobbers' to merchants' hands. Portions of unsold stocks of cheap Nails in this market result in some unevenness, but the general quotation is on the basis of \$2 per keg, for small lots at store.

Chicago.—The October trade has been very satisfactory in volume, and new business is coming forward steadily. The policy of selling subject to specifications within 60 days is eliminating the speculative feature from the demand for Wire products, as it limits the buying to current requirements of the jobbing trade and relieves the jobber of any anxiety regarding the course of prices in the future. We quote as follows: \$1.98, Chicago, in carloads to jobbers, and \$2.03 in carloads to retailers, with an advance of 10 cents for less than carloads from mills.

Pittsburgh.—New orders for Wire Nails being received by the mills are showing a slight increase, and this is taken to indicate that the lower priced stocks held by jobbers are being steadily worked off. It is stated that some of the large trade are very anxious to place contracts for Wire Nails for delivery in first two months of next year, but the mills are refusing to book such

contracts, except at a material advance over regular prices. The continued higher prices for Steel are the basis of reports that an early advance in prices of all kinds of Wire products is very likely, but no official confirmation of this report can be obtained here in the sales offices of the different Wire Nail concerns. We quote Wire Nails at \$1.80, f.o.b. Pittsburgh, in carload and larger lots for balance of the year delivery.

Cut Nails.—The tendency of the Cut Nail market is toward increased firmness, owing to scarcity and higher prices of Nail slabs and to the fact that Nail mills have a considerable amount of business on their books. Quotations are on the basis of \$1.80 to \$1.85, in carload and larger lots, f.o.b. Pittsburgh.

New York.—Cut Nails are moving in moderate volume, in proportion to consumptive requirements. Some unevenness in price is occasioned by remaining stocks of cheaper Nails. Small lots at store are, however, generally held at \$2 per keg, at store.

Chicago.—The general stiffening in the cost of raw material has made prices of Cut Nails very firm. The jobbing demand is very satisfactory and shows a normal movement into consumption. We quote in car lots to jobbers, Steel Cut Nails, \$1.98 to \$2.03; Iron Cut Nails, \$2.08 to \$2.13.

Pittsburgh.—The market is showing a decidedly firmer tone, and the mills will not book orders for Cut Nails at prices that would have been accepted some time ago. All the Cut Nail mills have a good deal of business on their books and are firm in their ideas as to prices. Nail slabs continue scarce and are commanding such high figures that an early advance in prices of Cut Nails is not unexpected. We quote Cut Nails at \$1.80 to \$1.85, base, f.o.b. Pittsburgh, in carload and larger lots.

Barb Wire.—Mills are still employed in filling orders placed at the time of lower prices, with the addition of some new business. This is expected to increase as soon as jobbers' stocks of cheaper Wire are worked off. The market is firm at the following quotations, f.o.b. Pittsburgh:

	Painted.	Gal.
Jobbers, carload lots.....	\$1.80	\$2.10
Retailers, carload lots.....	1.85	2.15
Retailers, less than carload lots.....	1.95	2.25

Chicago.—Shipments for the month have been large, and there is evidence that the stocks in the hands of jobbers and retail dealers have been moving steadily into the hands of the ultimate consumer. New business continues in very satisfactory volume, orders being taken only for specifications within 60 days. We quote as follows: To jobbers, Chicago, carloads, Painted, \$1.98; Galvanized, \$2.28. To retailers, carloads, Painted, \$2.03; Galvanized, \$2.33; retailers, less than carloads, Painted, \$2.13; Galvanized, \$2.43. Staples, Bright, in carloads, to jobbers, \$1.98; Galvanized, \$2.28; carloads, to retailers, 5 cents extra, with an additional 10 cents for less than carloads.

Pittsburgh.—New demand is showing some increase, indicating that the heavy stocks carried by jobbers for the past three or four months are steadily being worked off. However, the mills are still running mostly on specifications against contracts placed some time ago when prices were lower. The mills expect a considerable increase in new demand just as soon as these stocks have been worked off, but this will probably take some little time. The market is strong, and we quote Galvanized Barb Wire at \$2.10 and Painted at \$1.80 in carload and larger lots, f.o.b. Pittsburgh, subject to usual terms.

Fence Wire.—There is still quite a quantity of lower priced Wire to be disposed of before demand from the jobbing trade will show much of an increase. Manufacturers of Fence Wire are placing contract orders. The market is firm at regular quotations, as follows: To jobbers in carload lots on a basis of \$1.60 for Plain and \$1.90 for Galvanized, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days, the usual price to retailers being 5 cents additional:

No.	0 to 9	10	11	12	13	14	15	16
Annealed.....	\$1.60	1.65	1.70	1.75	1.85	1.95	2.05	2.15
Galvanized.....	1.90	1.95	2.00	2.05	2.15	2.25	2.35	2.75

Chicago.—Orders for Poultry Netting are being taken for shipment up to February 1, and a large tonnage is being booked on this basis. Specifications from manufacturers are heavy and contribute to the generally satisfactory tonnage of Wire products. Published statements have appeared lately that the leading interest in Wire products has been asking an advance of \$2 over present Fence Wire prices for next year's delivery. This, however, grows out of a misunderstanding of a policy that now prevails in marketing Wire products. All regular orders require that specifications shall be given within 60 days, but there have been a few instances where manufacturers using Wire as their raw material have insisted upon covering their contracts with their trade by purchases calling for delivery into next year, and have paid an advance over present quotations to secure this protection, but these isolated cases should not be taken as the basis for next year's business. We quote as follows: Carloads, to jobbers, \$1.78, base, f.o.b. Chicago.

Pittsburgh.—Some good sized contracts for Fence Wire are being placed by Fence manufacturers for delivery over balance of this year. It is also stated that some contracts have been accepted by the mills for delivery in first two months of next year, but at an advance in prices. This report, however, is not confirmed. A heavy increase in new demand is looked for by the mills just as soon as stocks held by jobbers, and bought when prices were lower, have been fully worked off, and this is being done quite rapidly. The market is firm, and we quote Galvanized at \$1.90 and Plain Wire at \$1.60 in carload and larger lots, f.o.b. Pittsburgh, terms 60 days or 2 per cent. off for cash in 10 days.

Rubber Belting.—While prices for Rubber Belting have not been advanced as yet by leading makers, the opinion is expressed that within a month a general advance will be compulsory, owing to the prices ruling now for crude Rubber \$2.18 to \$2.25 per pound, and the higher costs for Cotton Duck; Rubber and Duck constituting the principle ingredients in Rubber Belting. The business in this line now is referred to as somewhat better than formerly, but with no pronounced increase in the volume of orders. Doubtless the higher prices recently announced for Leather Belting will also have a tendency to advance the price of Rubber Belting.

Leather Belting.—No change was made in the price of Leather Belting at a meeting of the principal manufacturers October 20, and none is now anticipated for another month.

Air Brake Hose.—The higher prices for crude Rubber and cotton, coupled with the urgent demands of railroad companies for prompt deliveries for Air Brake Hose, has caused an increase of 3 cents per foot for this commodity, the market now being represented by a price of 37 to 38 cents per foot in lots of 5000 pieces. The railroads are short of the product, which is specially made for this purpose, according to M. C. B. 1905 specifications and tested to 400 lb. per square inch.

Sheet Zinc.—Another advance of $\frac{1}{4}$ cent per pound has been made in the price of Sheet Zinc under date of the 20th inst. The quotation is now \$8 per 100 lb., f.o.b. mill for Sheet Zinc in 600-lb. casks of the thicknesses from Nos. 9 to 19, inclusive: of the widths from 32 to 56 in., inclusive, and of the lengths from 72 to 96 in., inclusive. The discounts for cash and quantity are as follows:

	Cash with order. Per cent.	Quantity. Per cent.	Total. Per cent.
Carload lots.....	3	5	8
9000-lb. lots.....	3	3	6
6000-lb. lots.....	3	2	5
3000-lb. lots.....	3	1	4
Less than 3000 lb.....	3	0	3

Nuts.—Owing to a typographical error in our issue of October 21, the new price on C. T. and R. Hexagonal Nuts, blanked or tapped, under Notes on Prices, was made to read 6.30 off list, instead of the correct price. 5.30 off list.

Mechanical Rubber Goods.—There have been some withdrawals of prices on Mechanical Rubber Goods preparatory to an announcement of higher rates, owing to higher costs for some of the raw materials entering

largely into the manufacture of this line, leading items of which are Belting and Hose of various kinds, Packings, Wheels, Tubing, Springs, Matting, Tiling, &c.

Solid Box Vises.—Prices in this line are well maintained, and in some quarters makers are behind in deliveries. There is an excellent demand at the recent advance of about 5 per cent., which is well maintained by the various manufacturers.

Crow Bars.—The prices established three weeks ago are still current. Much of the trade is loaded up with goods at previous prices which were much lower, and yet makers will not consider orders at less than the present level. While no claim is made for a large demand at present, the halt is referred to as temporary, and manufacturers are not hungering for orders.

Picks, Mattocks and Grub Hoes.—While there is no specific change in the price of Picks, Mattocks and Grub Hoes, since the announcement of the advance earlier in the month, the market is firm and some of the factories report that they have all the business they can attend to and are booking new business at current prices.

Wringers.—The American Wringer Company, New York, October 21 announced advanced prices on Wringers, advancing Wringers covered by a five years' warrantee \$2.50 per dozen; those covered by a three years' warrantee \$2 per dozen; those covered by a one year warrantee \$1.50, and lower grade unwarranted Wringers \$1 per dozen. The new prices are accordingly as follows:

Five-year warranted Wringers, per dozen....	\$37.50
Three-year warranted Wringers, per dozen....	32.00
One-year warranted Wringers, per dozen.....	26.50
Low grade unwarranted Wringers, per dozen.	20.50

There is no change in either the discount or selling schedule, and the increase is attributed to market conditions. When the advance of July 1 last was made the price of crude rubber to the company had advanced from approximately \$1.10 per pound to \$1.52 per pound, and rubber was considered then so high that lower prices for it, it was believed, would soon be made. On this account the Wringer advances were not in proportion to the higher prices for rubber. Rubber has steadily advanced, however, until now it is well over \$2 per pound, with no apparent decline in sight. Much of this advance is charged to the automobile business and the demand for rubber for tires. Other contributing causes are higher prices for lumber, iron, spelter, &c.

Horseshoes.—The strength of the iron market has had a good effect on Horseshoes, with the result that prices are better maintained than some time ago. The arrangement by which there is a differential of 30 cents between large and small buyers seems to work well. While the market is thus in improved condition it is reported that there is some irregularity in some sections, especially in the Southern States.

Double Pointed Tacks.—The manufacturers of Double Pointed Tacks report a good demand and an improved condition in regard to prices. This is owing in large degree to increased cost of the goods, but also to a disposition to realize a better profit than was permitted when very low prices ruled.

Hardware Grade Wire Cloth.—The manufacturers of Wire Cloth in the Hardware grades on October 19 advanced prices 25 cents per 100 sq. ft., the market for which in fair lots is now reflected in the accompanying schedule:

	100 sq. ft.
Galvanized Wire Cloth, 2, 2 $\frac{1}{2}$ and 3 mesh.....	\$2.50
Galvanized Wire Cloth, 4 and 5 mesh.....	2.75
Galvanized Wire Cloth, 6 mesh.....	3.00
Galvanized Wire Cloth, 7 and 8 mesh.....	3.50

For 50-ft. rolls there is an extra of 10 cents per 100 sq. ft., and an allowance up to 50 cents freight on 200 lb. and over in a shipment.

Sash Cord.—There is divergency in manufacturers' prices of common Braided Sash Cord. Some prominent manufacturers have made slight advances in prices, owing to the cost of the material and the fact that they are considerably behind on orders. Other manufacturers

have made no change, but are naming the same prices which have been in effect for some time. Manufacturers usually find October a favorable month to place orders for supplies of cotton, but owing to short crop conditions and consequent high prices this year it has been the reverse. Jobbers are regarded as having large stocks of Cord on hand, which were purchased at lower than present prices, and this is possibly the reason why manufacturers have not generally put up prices. But on account of the condition of the raw material market some are of the opinion that such action will not be long delayed.

Tinners' and Miscellaneous Rivets.—There was an advance of 5 per cent., October 21, on Tinners' Rivets, Black and Tinned and Miscellaneous Rivets.

Glaziers' Points.—Glaziers' Points, in sympathy with the several advances in Zinc, from which they are made, were advanced recently $\frac{1}{2}$ cent per pound.

Coil and Trace Chains.—There was an advance last week of 35 cents per 100 lb. on proof Coil Chains, or equivalent to \$7 per ton, and the opinion is expressed that further advances may be looked for from the present improved condition of the market. On Trace Chains the increase is 3 cents per pair.

Cotton Twine, Rope, Etc.—Prices on Cotton Twine, Rope, Mops and kindred lines continue to advance as the result of shortage in the cotton crop and the consequent high price of cotton. Mills as a rule are full of orders for yarns and have no stock of finished goods on hand, and are curtailing production because they have not enough raw material on hand to carry them through the season on full time. In a general way the market may be represented by the following quotations on certain lines of cotton goods:

	Cents per pound.
Twisted Sash Cord.....	18 $\frac{1}{2}$ to 22
Best Rope, $\frac{1}{4}$ in. and larger.....	18 $\frac{1}{2}$ to 22
Medium Rope, $\frac{1}{4}$ in. and larger.....	16 $\frac{1}{2}$
Chalk Line, $\frac{1}{2}$ -lb. balls.....	25 to 30
Mops, 6, 9, 12 and 15 lb. to doz., according to quality.	8 $\frac{1}{2}$ to 21
Wrapping Twine, 5 balls to pound, according to quality.	12 to 23

Rope.—The Manila fiber market has been showing additional strength since the first of the month, which has resulted in slight advances in prices, resulting in more buying by cordage manufacturers. Fair Current Manila Fiber is now quoted at 6 $\frac{1}{2}$ cents per pound and Rope manufacturers claim that good Manila Rope cannot be made from this grade fiber. The general quoted price on Pure Manila Rope is 8 cents per pound, and cost of converting fiber into Rope is generally figured at 1 $\frac{1}{2}$ cents per pound. Sisal fiber is also active, but unchanged in cost. Under these conditions manufacturers do not regard the somewhat moderate demand for Rope as unfavorable to their interests. The market is represented by the following quotations: Pure Manila of the highest grade, 8 to 8 $\frac{1}{4}$ cents per pound; lower grades of Pure Manila, $\frac{1}{4}$ to $\frac{3}{4}$ cent less than the foregoing quotations. Pure Sisal of the highest grade, 7 $\frac{1}{2}$ to 7 $\frac{3}{4}$ cents per pound, base; Commercial grade, 6 $\frac{1}{4}$ to 6 $\frac{1}{2}$ cents per pound. Rove Jute Rope, $\frac{1}{4}$ in. and up, No. 1, is quoted at 5 to 5 $\frac{1}{2}$ cents per pound.

Window Glass.—At the adjournment of last week's meeting, called for the purpose of completing the formation of the Imperial Window Glass Company, 1900-pot capacity of hand made Glass had signed the contract. This left 450-pot capacity, of which the members of the committee were hopeful of getting all but about 100 to sign. If this can be accomplished the plan is to control, if possible, the 100 pots outside. It is understood that the idea is to restrict output by proportioning a certain number of boxes per pot capacity. Factories that make more than their proportion will forfeit it to the company below the cost of production. Factories where Glass is produced at a loss it is proposed to close up. The American Window Glass Company, which because of its large capitalization and other reasons, cannot see its way clear to lose its identity by becoming a part of the new company, has signified its willingness, so it is reported, to co-operate with it, but until an organization is completed the machine people take the position that it has no one

to treat with. If all arrangements are completed the product of Glass will probably be on the basis of 7,000,000 boxes per year, which is about the annual consumption of American Glass, although in 1907 the consumption was from 7,500,000 to 8,000,000 boxes. It is assumed that 4,000,000 boxes would be allowed to the hand-made factories and 3,000,000 boxes to the machine interests. Discounts on Glass actually obtained by merchants from list October 1, 1903, in some sections of the country are as follows: First three brackets, Single, except 16 x 20, 90 and 40 per cent.; all other Single, 90 and 30 per cent.; all brackets of Double, 90 and 35 to 90 and 40 per cent. In other localities all Single is quoted 90 and 35 to 90 and 40 per cent., and all Double at 90 and 40 per cent. From manufacturers' list January 1, 1901, a quotation of 90 and 40 per cent. discount is obtainable. If the Imperial Window Glass Company is formed it is expected that prices will be advanced 10 to 15 per cent. within 30 days.

Linseed Oil.—Prices have advanced during the week 2 cents per gallon owing to the higher price of Flax Seed, which reached \$1.72 per bushel on the 25th inst., or about 50 cents per bushel higher than it was at this time last year. The high price of Seed has resulted from the fact that the country has been practically bare of Seed and Oil for some time. After Seed began coming in Western crushers commenced buying, as well as Eastern crushers, who were anxious to get some million bushels delivered before navigation closed, as after that time all rail freight would increase the delivery cost 15 cents per 100. While the Seed received at primary points to date is up to the average for the past 10 years, the urgent and competitive demand has forced up prices. The average yearly consumption of Oil by the country is about 60,000,000 gal. This requires in the neighborhood of 25,000,000 bu. of Seed, as one bushel of first-class Seed is counted on to yield 2 $\frac{1}{2}$ gal. of Oil. Should the actual crop of Seed drop off to 25,000,000 bu. or thereabouts, a continuation of 60 to 70 cent Oil is expected by some in the trade. Consumers are buying small lots of Oil, as they can get it, for nearby requirements. Some contracts were placed at 40 cents, but crushers will not accept contracts in the present unsettled state of the market, and buyers would be equally unwilling to place them. Quotations are as follows: Raw Oil, 62 cents per gallon in lots of 5 bbl. or more; in less than 5-bbl. lots, 1 cent advance. Boiled Oil is 1 cent advance per gallon on Raw.

Spirits Turpentine.—On a stronger Southern market prices have advanced at this point about 2 cents per gallon during the week, with a strong tone. The demand is not active, which is not an unusual condition near the end of the month, and buyers are only taking what is needed for immediate requirements. The New York market is represented by the following quotations: Oil Barrels, 61 to 61 $\frac{1}{2}$; Machine Barrels, 61 $\frac{1}{2}$ to 62 cents.

JAMES ALEXANDER RAE, connected with the house of Neil Auld & Co., Bartolome Mitre, 544 Buenos Aires, Argentine Republic, is now in New York on a business trip for the firm. The house represents various engineering and manufacturing interests in metal lines covering a wide range. Mr. Rae's visit to New York is to get in closer touch with American manufacturers, some of whom are already represented. What they are now interested in include such goods as Internal Combustion Engines, Gasoline Launches, Windmills, Roller Desks, Well Boring Machinery and Pumps, Buggies and Sulkies, Sewing Machines, Lanterns, Guns and Rifles and similar goods. The house has large sample rooms in Buenos Aires for displaying goods, a branch in Montevideo, Uruguay; a house in London, and representation in New York. Mr. Rae's address until he leaves for London on November 17 is 256 West Ninety-seventh street, New York.

W. W. Wilkinson, Dwight, Kan., has purchased the retail Hardware business of J. B. Kistler, carrying Shelf and Heavy Hardware, Stoves, Tinware, Window Glass, Agricultural Implements, Paints, Oils and Sporting Goods.

Freight Transportation Bureaus.

Their Establishment Throughout the Country a Necessity.

Lines on Which They May Be Organized and Practical Benefits Secured.

BY A TRAFFIC MANAGER.

THE Freight Transportation Bureau organized and conducted in the interest of shippers affords an agency for accomplishing the economical solution of the freight transportation problem for the future and on co-operative lines, which at the present stage of commercial development represents the true spirit of progress.

The Conditions of the Past

were such that there was little or no organization of the shipping branch of business, the functions natural to that department being looked after generally by the manager or owner, who on account of other duties which he considered to be more important, gave secondary if any attention to the subject of freight transportation.

Or else matters pertaining to shipping were left to so-called shipping clerks, who were obliged to attend to so many laborious duties foreign to their calling that they had little time for study and investigation of the subject, and, generally speaking, lacked the capacity and ability to deal with the transportation problem.

It Was the Custom

for transportation companies to make freight rates; prescribe conditions as to the shipping and receiving of merchandise for transportation; formulate rules and regulations all in an arbitrary and dictatorial manner; and the shippers and receivers of freight, lacking organization and representation, were obliged to accept the terms with little or no protest.

Even when the pioneers in the organization of the shipping department offered the freight bureau as a partial remedy for the existing evils the shippers' refusal to accept was accompanied by the common and short-sighted excuse that THEY did not pay the freight, showing a disregard for the interest of the buyer and incidentally leaving it for one to infer that they unknowingly disregarded their own interest as receivers of freight.

Indifference and Inattention Has Been Costly.

It is no exaggeration to say that shippers and receivers of freight have lost directly and indirectly millions of dollars through their indifference or inattention to their transportation interests. There have been reasons for all this. The field of transportation has had quick growth. The duties and requirements of freight transportation are admittedly complex, and in the minds of shippers it was considered impossible to keep posted as to the voluminous requirements, as well as unnecessary to observe a great many of them.

At any rate shippers have been to a great extent indifferent and hopelessly inactive to any losses incurred through inattention to these requirements, as well as helpless to secure profits and advantages to be gained by a knowledge of such requirements.

Railroad Exactions Have Been Feebly Resisted.

The organized effort of railroads to secure undue and unreasonable charges and to inflict discriminations and the other inequities on individuals, corporations and sections of the country, as against favoritism in tariffs, requirements and advantageous conditions established by

them, intentionally or otherwise, in connection with other individuals, corporations and sections of the country, has been feebly resisted by traffic committees of the various chambers of commerce and commercial bodies.

While these bodies have accomplished much from the individual standpoint, they have been principally experimental in their action and educational in their effect, and have shown that an organization of shippers on a wide and comprehensive scale must prevail to secure the co-operation of the railroads in the solution of the transportation problem to their mutual interest, as well as incidentally establishing a system beneficial to the general growth of the commerce of the country and advantageous to both in the competition of the nations for commercial prestige.

Freight Knowledge Profitable and Necessary.

It is characteristic of commercial development that a theoretical presentation of an idea cannot be accepted immediately by the ordinary mind. The idea must be presented and proved by slow experience to be practical along the lines of true economical development, when it will become popular. It is so with the development of the freight bureau. **In fact, conditions have arrived at such a stage that it is now compulsory for preservation of their rights and existence that shippers pay increased and active attention to the transportation department of their business.**

The experience of the comparative few who have given their attention to the matter has proved that knowledge of the subject and organization of the shipping department is a profitable investment, both as to saving of money and improvement in service; also as the Interstate Commerce Law incorporates freight tariffs, classifications, rules, requirements and conditions as part of the law, it is therefore necessary that shippers acquaint themselves in regard to these things so as to conform to and avoid conflict with the law.

Organization of Local Bureaus.

As preparatory to this general organization, there should be freight bureaus or organizations of some kind to look after the freight interests not only in each important trade center, but in many of the smaller cities and fair sized towns throughout the country.

IT WOULD SEEM TO BE THE DUTY OF THE READERS OF "THE IRON AGE," WHO ARE INTERESTED IN TRANSPORTATION, TO TAKE THIS MATTER UP PRACTICALLY IN THEIR DIFFERENT COMMUNITIES AND FORM SOMETHING IN THE LINE OF A FREIGHT BUREAU.

Practical Results.

The Freight Bureau has passed the theoretical and experimental stage in some trades and in some sections of the country, inasmuch as where they have been organized they have proved their usefulness and profit, **not only in putting the shipping departments of each of the individual members on a business basis, but resulting also in placing the promoters and members in a position to secure advantages and profit which others not connected with such organization do not enjoy.**

Acting on broader lines, the bureau could record complaints and recommendations of its members, detect discriminations and abuses against the individuals, trades or section subject to its jurisdiction, and by knowing its rights under the laws could successfully prosecute for redress of such grievances before the tribunal authorized to effect judgment.

THE series of bulletins entitled "Plymouth Products," issued by the Plymouth Cordage Company, Plymouth, Mass., have been found so interesting in their treatment of various fibers, the history of rope-making, &c., that many requests for them have been received from schools and public libraries, as well as from technical and general publications who wish to publish extracts. Eight of the bulletins have thus far been issued, and the company is now ready to furnish them, while the supply lasts, in a substantial loose-leaf binder, forming a book of about 100 pages.

FLORIDA RETAIL HARDWARE ASSOCIATION.

The first anniversary convention of the Florida Retail Hardware Association was held in Jacksonville October 12, 13 and 14. The deliberations took place in the auditorium of the Board of Trade. A large proportion of the members were in attendance, and the discussions were interesting and instructive. M. E. Gruber, West Palm Beach, president of the association, who is on a trip to the Pacific Coast, was unable to be present, and in his absence Vice-President B. F. Watts, Leesburg, occupied the chair.

Among the prominent Hardware organization officials present from other States were Sharon E. Jones, Richmond, Ind., and C. A. Peck, Berlin, Wis., representing the National Retail Hardware Association, and W. P. Lewis, who appeared in the interest of the National and Pennsylvania Hardware Mutual Insurance companies. Jacksonville, in view of its accessibility, was again chosen as the scene of next year's convention.

Convention Committees.

The president appointed the following committees to serve during the convention:

RESOLUTIONS: George H. Fernald, chairman; Fred H. Young, G. E. Noblett, C. F. Smedley and L. N. Pearce.

NOMINATIONS: A. E. Sloan, B. M. Hall, W. J. Hill, M. B. Bates, R. E. McNeil, T. P. Carpenter, Frank Brumby, O. D. Van Lusk and D. L. Thomas.

NEXT PLACE OF MEETING: R. E. McNeil, G. F. Altman, B. F. Watts, C. F. Smedley and H. A. Hendry.

Legislative Committee's Report.

Secretary Jackson read the report of the Legislative Committee, in which it was conceded that its efforts to put through bills in the interest of the trade were unsuccessful. It was, however, insisted that the collection, homestead and exemption laws were not fair and equitable as between creditors and debtors and that they should be amended so that an honest debt might be collected. With this end in view it was recommended that a strong Legislative Committee be appointed at the meeting to take up and analyze existing laws unfair to the creditor class, with a view to putting before the next session of the Legislature such bills as will secure merchants in their rights and equities.

Increasing the Membership.

A very energetic effort will be made during the next few months to add to the membership of the association. With a view to stimulating interest in this work on the part of the regular and honorary members of the association, J. B. Gordon of the Southern Co-operative Foundry Company, Rome, Ga., offered as a prize to the person securing the most new members during the year a handsome Cook Stove. As a second prize G. H. Cantrell, representing the Simmons Hardware Company, St. Louis, offered a nice Baby Carriage.

Election of Officers.

The board of officers elected for the ensuing year is as follows:

PRESIDENT, B. F. Watts, Leesburg.

FIRST VICE-PRESIDENT, Fred Young, Lake City.

SECOND VICE-PRESIDENT, Geo. H. Fernald, Sanford.

SECRETARY, W. K. Jackson, Lakeland.

TREASURER, D. L. Thomas, Tampa.

EXECUTIVE COMMITTEE: M. B. Bates, Quincy; C. F. Smedley, Jacksonville; R. E. McNeil, Live Oak.

Resolutions.

The following resolutions reported by the committee were adopted by the association:

Be It Resolved, That the thanks of the Florida Retail Hardware Association, in session assembled, be given to the John G. Christopher Company of Jacksonville, Fla., for its kindness in allowing this association to use its store room for the display of exhibits; further

Resolved, That the thanks of this association be extended to the press of Jacksonville and the State generally for the courtesies shown this association through the columns of the various newspapers; and further

Resolved, That the Board of Trade of the city of Jacksonville be especially remembered for the courtesies shown to this association as a whole, and to each and every member thereof, and for its generosity in tendering its commodious auditorium to this convention; and be it further

Resolved, That thanks be voted to the Hardware dealers and various manufacturing concerns of Jacksonville who

have extended courtesies during this session of the convention; and be it further

Resolved, That those members of the National Association and representatives of Hardware interests throughout the United States who have favored this convention with their presence and addresses be advised of the appreciation of the Florida Retail Hardware Association for their thoughtfulness in attending and the helpful knowledge gained through the medium of their various addresses; and it is further

Resolved, That thanks be extended to the officers of this association for their earnest and beneficial work done during the past year.

The Question Box.

C. A. Peck, Berlin, Wis., was asked to take care of the opening Question Box discussion on Tuesday morning.

Among the questions brought up and discussed were the following:

Is Co-operative Buying by Hardware Merchants Feasible and Profitable?

Mr. Peck referred to his experience as having been that co-operative buying did not pay, for the reason that there were so many things to be settled between the buyers and there was generally more or less dissatisfaction and antagonism among competitors. He did not know of a single instance in his section in which the idea had been carried out successfully.

Secretary Jackson expressed himself in favor of co-operative buying, and said that occasionally he went in with a fellow Hardwareman in a nearby town and bought a carload of Sash to advantage.

Should a Jobber Sell to Dealers Who Do Not Maintain a Regular Hardware Stock?

Mr. Peck said that he would not buy from a Hardware jobber who sold to other than Hardware merchants. He said the practice varied in different sections of the country. West of Missouri River nearly all stores are general stores and they carry a good stock of Hardware. In his State one cannot buy from a Hardware jobber unless he is a retail Hardware dealer. If the jobber sells to other than Hardware stores complaint is lodged with the secretary of the association. They had had a good deal of trouble with grocery jobbers getting an order from one of their customers for, say, a Lawn Mower, the grocery jobber going to the Hardware jobber and getting whatever he wanted for his customer. The association got after that sort of thing and the abuse was done away with.

He recommended that if any of the members of the Florida Association had complaints of that sort to take the matter up with Secretary Jackson, who could then give the facts to the jobber and have the injustice corrected. If the secretary failed to obtain results it should be made an association matter and all the members of the association should be advised that the jobbing house was not working in the interest of the retail trade.

President Watts impressed upon the members the necessity of taking this question to heart. While no complaints had been made he had no doubt that the practice prevailed to quite an extent in the State. He said it rested with the members of the association to stop it.

Is It Better Policy to Carry Exclusive Lines or to Buy Promiscuously?

Mr. Peck in introducing this question said that he thought it was better to get a reputation on one line and stick to it. When he was actively in business he handled a line of Paints and sold it under the name of "Peck's Own" and got quite a reputation on it. In the matter of Stoves and Ranges he thought it was better for a merchant to limit himself to one line, being careful to see that the manufacturer did not take advantage of him.

Mr. Thomas agreed with Mr. Peck that one good line of Stoves was the thing. He thought it was unwise to sell a cheap and a high class line of Stoves, as some do.

In reply to a question Mr. Jones said that he believed a medium line rather than an expensive line of Stoves would take best in a small town. It should be an article that the merchant could stand by, as a merchant is always expected to make good any defects. In his own case he first put in a high priced line of Stoves and subsequently was compelled to put in a medium priced Stove. Most of the workmen in the factories around his city wanted a medium priced Stove, and, of course, his wealthier patrons wanted the best that could be had. Mr. Jones went on to say that he thought it was worth while studying very seriously the question of putting in nothing but high grade goods.

Mr. Noblett said that he picked out what he thought

to sell at \$12 to \$15. He did not believe they could sell them, but they did, and to-day three out of every five Lawn Mowers sold in the Peck store range in price from \$12 to \$15—and of course there is more money made on them than on the cheaper goods. Less expensive Mowers are carried as well.

Mr. Peck also expressed himself as believing in advertising his own name instead of some one else's. If the line was good his name stood for something. He did not believe in advertising some good line of Stoves—or anything else for that matter—under some one else's name, for when a manufacturer or jobber took the line away it was an easy thing for him to do it, and your competitor got the trade thus worked up.

What Would Be a Reasonable Percentage of Expense on a Hardware Business of \$50,000 Per Annum?

Mr. Jones said that up to 5 years ago the expenses of his house amounted to about 10 per cent. of the sales. Now they run 14 per cent., which includes salaries, interest on investment, &c.

Mr. Noblett said he had had a lot of experience in the Hardware business. He examined goods as to quality and added what profit he thought they would stand. Sometimes he added as much as 100 per cent. and his customers were pleased with the goods even at



B. F. WATTS.



M. E. GRUBER.



W. K. JACKSON.



D. L. THOMAS.

were the three best lines in high, medium and cheap grades. He had been selling Stoves for the past 15 years, and when a customer told him anything was wrong with the one bought from him he ordered a new part for it and the customer appreciated it. He did not think anything was gained by having a stock all mixed up, containing selections purchased from many makers. It caused a whole lot of trouble in reordering.

In regard to general Hardware lines Mr. Jones said he believed if his company were to invoice its stock at this time preparatory to selling out to some one a valuation would be placed upon the advertisement of certain lines in the stock that had become well established in the city as a result of the enterprise and energy of the company in pushing them. They bought from manufacturers principally, and from jobbers, too, when the goods were absolutely right. The same well-known brands which they had carried for years are on the shelves to-day. The policy of the firm is to make a manufacturer or jobber from whom they buy a certain line promise them the sole agency on the goods when they have succeeded in establishing a good big trade on them, and this is a considerable asset in a business. He recommended that when the merchant has lines of goods that satisfy customers and yield a reasonable profit they make no change, but pursue the course followed by his company; that is, when the trade is established obtain an agreement from the manufacturer or jobber that he will not sell that line to any other dealer in the town.

Mr. Peck said that when he was active in business he did not buy Lawn Mowers that sold for over \$6 or \$8, but when his sons took hold of the store they put in machines

that price. He kept posted as to competitors' prices and did not allow any one to undersell him, quality of goods considered.

Upon being asked what was his percentage of expense Mr. Noblett said he did not know. He had a set of books but had not taken stock in over two years. He said the store and the stock belonged to him and he knew that he was making money. He said that he thought he would soon find out if he was losing. He tried to keep a good stock of the best Hardware. The cost and selling price were marked on all goods in the store. When any one came in to buy, the clerks did not have to run after him to find out what the price was.

Mr. Peck said that in his business he never got below 15 per cent., and sometimes ran as high as 22 per cent.

Mr. Young said he owned his own building, but figured in all expenses, rents, &c., and his percentage of expense on a business of something like \$30,000 to \$35,000 a year was about 15 per cent. In marking goods his custom was on staple articles to make the price very low, but if something that no one else in the town handled he went after a good profit, sometimes 100 per cent.

Mr. Fernald said that the expense with him ran from 19 to 22 per cent. His business comprised several departments, separate accounts being kept for tin shop, plumbing shop, &c.

The Question Box was brought up again on Thursday, this time under the leadership of Sharon E. Jones. The first question was

Does it Pay to Handle Sewing Machines in Hardware Stores?

Mr. Noblett said that he thought Hardware stores should handle most anything there was a demand for.

Another merchant said that Sewing Machines did not pay for the reason that in Florida the machines were peddled around in wagons and from house to house, so that the man in the store had very little show to sell them. Machines so handled were sold at from \$35 to \$65. If on the installment plan a man got all kinds of prices, and for cash about \$35. He had a few machines in the store and they were hard to sell.

President Watt said that he had recently put in a few machines, as he felt that if peddlers could go around and sell the number they do at the prices they get he ought to be able to sell a few at a nice profit, and not charge a high price either. He believed that money could be made out of the line. He guaranteed every one of them, as the manufacturers sell to him on that basis.

Mr. Fernald said that when a Hardware store also carried furniture it was a simple matter to handle Sewing Machines and make money on them. In his city Sewing Machines were handled by the furniture dealers. They have some arrangement with the manufacturers whereby they help them to sell the machines by peddling around the country. Wagons are sent out and controlled by these dealers, and they get the benefit of the sales and profits. Where furniture was not carried in connection with Hardware, Mr. Fernald thought that sales of Sewing Machines would be light, as the merchant would be somewhat handicapped.

Mr. Peck thought that local conditions had much to do with the question. If a Hardwareman put in a line of Sewing Machines he should have a man to send out and demonstrate. He did not think it would pay otherwise. In Wisconsin one-half the Hardwaremen handled Sewing Machines, but they always sent out some one to demonstrate. The profit of the machines ranged from 40 to 50 per cent.

Mr. Jones said that the class of trade and environment had much to do with it. His firm had strong competition, inasmuch as quite a number of his brother Hardwaremen handled machines. From his experience he did not think it was necessary to send out experts with the machines.

"When There Is an Exclusive Hardware Merchant in a Town Should Jobbers Sell a General Merchant?"

Mr. Altman said that this was a common practice in Florida.

Mr. Young said that grocery stores in his section sold Nails, Hinges, Plow Handles, &c., and that nearly all general stores carried Plows, Hoes, Traces, Hinges, &c. They can buy such things from most any jobber, and when a jobber sends his man to a town and he cannot sell the goods to the Hardwareman he sells them to the general store. He thought it rather a broad question to say that jobbers should not sell any but hardwaremen. A general store sold Traces at 40 cents—the Hardware dealer could not get 60 cents for the same quality. He had never made any objection because he felt that it was up to the jobber to get business as best he could in a legitimate way. He was able to buy at better prices than the little fellow, feeling that he could meet the price and competition, and as a general rule the general stores do not handle the best grade of goods. People generally go to the Hardware store where they can see a big line.

Mr. Peck said that it depended a good deal on the conditions. If a grocery store was carrying a good line of Hardware and was not a demoralizer of prices it was different from a man buying just a little to annoy the Hardware merchant. In the latter case the matter should be put up to the jobber in the right light.

Mr. Jones believed that if a jobber sold a line of Fishing Tackle, Stoves or Tools the merchant ought to have the exclusive agency for the line in the town, and if he sold to any one else in the town the merchant should drop him. But on Hinges or Nails or common commodi-

ties, which a general store ought to carry, there should be no objection.

Is it Best to Mark Selling Prices in Plain Figures or Not?

Mr. Young, who said he was responsible for the question, said he used characters, and would like to have the views of the members in regard to their practice.

Mr. Peck expressed himself as opposed to putting figures on articles that appeared in the show window. If he saw the price on an article in his competitor's window he was apt to go back to his store and see if he could not make just a little better price on the same article. He did not think this was exactly a fair thing to his competitor, but it was human nature. On the other hand, he said parties who marked show window goods with prices seemed to be successful.

Mr. Fernald said that on goods like Enameled Ware, &c., he believed it a good idea to put prices in the window. As to shelf goods, however, he did not consider it good policy. Generally a contractor was given a little better price on his Tools than the ordinary customer, and he thought it safer to mark in characters.

Mr. Pearce said that he used to mark in plain figures, but since the first of the year he had used characters, with more satisfaction to himself and his customers.

Mr. Young said that he marked all of his goods in characters except when a special line or article was shown in the window, in which case the prices were plainly marked. He also put plain figures on some brands of Pocket Knives which he controlled. This seemed to interest people and to elicit many sales.

Mr. Jones intimated that both methods were used in his store. One week the company filled up its show windows with a lot of goods on which prices were given and the following week they were occupied with goods without prices, both methods working satisfactorily. No goods were put in the window that were sold by competitors, nor were contractors' goods displayed, as he thought contractors should get a little better price than the average buyer. A few months ago the firm purchased a lot of beveled edge framed mirrors, which were put in the windows and marked at 15 cents each. It was stated that they would not be delivered at that price, but they went like hot cakes, the people being glad to carry them home. He estimated that fully 50 per cent. of those who bought the Mirrors also purchased other goods. On a recent Saturday he said to the young man in charge of the Sporting Goods department, "Fill your windows with sidewalk Skates for children and do not put the price on them." This was not very successful, so the price, 45 cents, was put on them, and six pairs were sold in one hour.

Hardware Advertising.

R. D. Baldwin of the Simonds Mfg. Company, Fitchburg, Mass., read a valuable paper on the subject of Hardware Advertising, from which we make the following extracts:

Store Appearance.

There are two things which come first of all in advertising. You may not call them important, but I have found them to be so. The first is the appearance of your store. That in itself is the most distinct ad, and you should have quick and energetic clerks to keep the stock always in good order. The best investment that I know of for a Hardware store is to get a boy who can take care of the stock and keep it always looking nice and clean; later this boy will have learned the stock and will be a good clerk.

Personality.

The second thing is the personality of the man running the store. That in itself is an advertisement. Whatever you do guard yourself as regards your relations with those in your own city.

Show Windows.

The best grade of advertising medium is the show window. These should be used before anything else. They reach men and women alike and are always good. To tell you how to decorate windows would take longer

than this convention lasts. The simple ways are always the best ways. Put in desirable goods at the right time. Put in Lawn Mowers at the time they should be used; show Planters' Tools when they should be shown, &c.

Bargain Windows

for a day or two, or week, once in a while are good, too. My idea is to just put the goods in there as you take them out of the shelves instead of trying to arrange nicely.

The question as to whether it is best to put on price tickets or not is a debatable one. Most people think that price tickets, as a general thing, are the best thing to put on. In my opinion that depends on what class of goods you are showing and the class of people you are catering to. If I had a line of goods that I handled exclusively, or some bargain stuff, I believe I would put price tickets on them.

Newspaper Advertising.

The next item is newspapers. They principally reach the women. Women read ads more than men do; therefore the talk has got to be lively and interesting in newspapers. If there is anything that you heard or read about advertising, it has been **change your copy continually**. I can only repeat that. Change every issue if the paper is a weekly, and if a daily change anyway every other day. It is a matter of considerable thought and trouble to get copy that is interesting to women, but once you do get it it will have results. Your copy should always be plain talk; it should dominate your store. Use cuts if to advantage, otherwise use plain talk. Most manufacturers are always glad and ready to supply cuts and ready-made advertisements. Of course, the bargains which you have should be kept before the people in the newspapers.

If a newspaper man comes to you to get an ad, make him give you some assistance in getting it up. Tell him the stuff you want to advertise and let him furnish a line of plain talk. You simply want to give the news of your store, that's all. There are so many things in the store that you can't show them all, and you simply want to get before the people the store in general.

Getting before the people the advertised lines you handle is also a good thing. If you carry any of the lines that are extensively advertised in magazines, it is good to put that fact before the people.

Mailing List.

The next point I want to make is about your mailing list. If you don't do anything else—if you don't use the local newspapers you can at least get a live list of people in and around your town, farmers in adjacent country, &c. To this list of people you could send out a form letter or circular matter furnished by manufacturers, possibly a booklet of plain talks on Hardware. This way you will keep the things before the people, and you are bound to hear from it. Every time they think of Hardware they will think of your letter or the booklet. It has always been a success where tried on a businesslike basis.

The human mind is so constituted that it is bound to take cognizance of something that is continually kept before it. That is the psychology of advertising. No one can talk to you here and tell you how to do advertising. The way to make a success is to read the papers, the magazines, the write-ups in the trade journals about advertising; study the ads. of the Hardware people. Take the *National Bulletin*, *The Iron Age* or whatever journal you like and take the time to look them over and read the advertisements of Hardware people. That soon begins to grow interesting to you and will furnish you with many good ideas.

The Sale of Paint by Hardware Merchants.

J. H. Gay, of the Dozier & Gay Paint Company, Jacksonville, made a short informal address on the subject of the sale of Paint by Hardware merchants, giving an illustration of salesmanship, in part as follows:

One or two thoughts have been brought out thus far about getting profits and meeting customers. I will tell you of an occurrence to-day. I have my desk near the front door, where I can keep an eye on the business and give everybody the glad hand as they come in. To-day a gentleman came in. I was sitting at my desk and I cocked one eye up to see if the clerks were in attendance. The clerk called me and turned the customer over to me. I found he was a stranger in the city—from Illinois—coming to Florida to locate and was going to open up a little store somewhere down the St. Johns River.

He said he wanted some Paint and I asked him what kind he wanted. "Well," he said, "up where I come from they use white lead; that seems to give better satisfaction than anything else." I told him we did not make a business of selling lead, we got out of that some time ago, but only furnished a little now and then to some of our customers for accommodation. We can't afford to sell a quantity of lead and a barrel of linseed oil and make a few cents profit, and I told him so and added that we could not talk lead and oil in a jobbing way. Then I started out to tell him why it was not a good thing to use lead, and I believe it too, and I set in to try and make him see it that way. I told him that we had been manufacturing Paints for a long time, and that our customers preferred ready-made Paint. Of course we have to use a little lead.

An Inspection that Brought Good Results.

I asked him to take a little walk with me and I would show him 15 or 20 houses painted with our goods five years ago, and would also point out some houses painted with lead within the past year or two, and let him judge for himself the better of the two. He stated he had to go to lunch at one o'clock. It was then twenty minutes to one and I told him I would let him off at one sharp. He consented to go, and I showed him about 20 houses in 20 minutes painted with our Paint and also showed him four or five painted with lead, and when we parted he said he would consider the matter and come back to the store. I told him that I was quite busy to-day on account of there being a Hardware Association meeting here, and I desired to be with you, and if he called at the store in my absence to talk to the boys and they would fix him up.

Just as I got on my coat to come up here in he walks. To wind up with, I got an order about that long for ready-made Paint. If I had sold that man what he thought he wanted I would have made probably five or six dollars, and as I sold him what I thought he wanted you can imagine what I made.

I want to show you that I sold him something better than what he called for and I think that is what is called salesmanship—to sell a man something that he should have in preference to what he thinks he wants. This incident came to my mind while the question of profits was being discussed. It has been said, and better than I have said it, that the way to do business is to sell good goods and make a profit.

The Secretary's Report.

W. K. Jackson, Lakeland, secretary-treasurer of the association, made a detailed report in regard to the finances of the association, showing that the organization was in a prosperous condition. He stated that the association had been organized with 19 active members and 8 honorary members, and that at the present time the enrollment consisted of 46 active and 42 honorary members. While this growth was not all that had been hoped for, nevertheless, it was a material and healthy growth, considering the fact that the organization had not been strongly brought to the attention of the merchants of the State.

Grievances.

Referring to the matter of grievances Mr. Jackson had the following to say:

While I have heard complaints on account of irregularities and trade abuses by quite a number, there has

been but one grievance filed with me. That was of a manufacturer and dealer out of the State quoting to consumers at same discount as to dealers in that city. I at once took the matter up with the party complained of. At first he seemed to want to deny or wiggle out, but the proof was beyond doubt. I said to him, this must not be repeated by you; that is, you must not quote or offer to sell to any consumer or contractor (unless such contractor is a regular dealer) in any city, town or community in Florida where there is a dealer, at less than a legitimate profit or commission to such dealer. He acknowledged receipt of my letter and said he had no intention of selling a consumer. I have not heard of a repetition.

Brick, cement, shingles, lath, wall plaster and many other articles are sold by manufacturers, or at least by some manufacturers, to consumers at the same price as to dealers. This should not be tolerated.

Some traveling salesmen for Buggies, Wagons, Harness, Cook Stoves and other lines have a way, if the dealer in the city, town or community cannot order, or for any reason does not buy from them, of going out and trying to sell, and often do sell users or consumers, liverymen, draymen or whoever they can.

This is unfair dealing and should be broken up. The salesmen for some jobbers if they cannot sell the dealer in the city, town or community, go out and solicit the consumer or user and at prices less than the dealer can live at. Such business is unfair and should be put a stop to by the dealers.

In some States such things have been practically overcome by the dealers standing together and making a square fight. We can, if we will. And I here and now insist that every member of this association pick up the facts of every infraction or trespass by manufacturer, jobber, salesman, agent or representative upon the rights of the retail dealer and report the same to the secretary.

Classification and Freight Rates.

Mr. Jackson then called attention to Hardware mutual insurance as worthy of the support of the members. Referring to the matter of classification and freight rates, he said:

If you will but examine the present classification in this State you will find the most glaring inconsistencies and open discriminations against lines of Hardware. You will find heavy, compact and, I might say, indestructible articles of Hardware classed with and bearing the same rates as light, fragile, subject to damage stuff. You will find that the rate is three and one-half times more on a car of Nails, Wire, Wire Fencing, &c., than a car of the finest Kentucky horses or cattle; you will find that it costs you 10 cents more per 100 lb. for a car of Doors 200 miles haul than for a car of Glazed Sash. Such inconsistencies run through the classification and rate sheets of the State. As individuals we can do but little, but as a whole, working together, these irregularities might be overcome.

Homestead, Exemption and Collection Laws.

In no other State, said Mr. Jackson, was it so difficult for a creditor to compel a debtor to pay a just debt as it is in Florida. The Legislative Committee of the association had made an effort at the last session of the Legislature to have the homestead, exemption and collection laws amended to the end that it would be possible to make a person pay an honest debt, but the effort was a practical failure inasmuch as the labors of the committee were not properly supported by the members of the association.

Recommendations.

Mr. Jackson suggested that the following matters be considered by the Committee on Resolutions:

1. The secretary shall present in open session at each annual convention an itemized financial statement showing from what source all money came, also showing each disbursement.

2. The annual membership dues shall begin January 1 each year and up to July 1; after July 1 for the balance of the year each member admitted shall pay one-half the annual fee.

3. That the president, Executive Committee and secretary shall be paid their actual traveling expenses when called from their homes to transact business for the association.

4. That the secretary be instructed not to issue any membership list at less than \$1 each, except to honorary members, the persons, firms or corporations represented by them, the trade journals or members of the association.

5. That the officers or members of this association shall not furnish membership lists to any outsiders.

6. That members do not report on the standing of merchants in their locality unless they are positive that the inquiry be from a well-known anti-mail order house.

7. That each and every member be requested to report promptly to the secretary the death or other serious misfortune of a member; all changes, such as burnouts, suspensions, selling or retiring from business of any person in the Hardware trade, together with new concerns opening up within their knowledge.

Mr. Jackson also recommended that the time for the payment of annual dues be changed to January 1 instead of the annual meeting, because as the matter is now handled, with money coming in all the time and up to the last moment, it was very difficult for the secretary to make a report with any degree of accuracy.

The Hardware Store of To-Day.

Called upon at the Tuesday morning session to address the members, Sharon E. Jones of the Jones Hardware Company, Richmond, Ind., made some instructive remarks in regard to the enterprising and aggressive conduct of business, from which we give the following extracts:

When we first went into business we thought our customers wanted cheap goods, but I soon got over that and jumped to the other extreme and put in the very best goods I could find. I found that the good goods sold easier, with less trouble, less expense and less advertising, and the customers did not do the kicking that they did when they got cheap goods. It is the profits we are after, not the volume of business.

The typical Hardware store of to-day seems tacked down to certain things; that is, we think that unless we stick strictly to Pitchforks, Rakes, Hoes, Nails, Saws and Chisels and such things we have broken the faith and got over the lines and messing into other people's business. I got over this when I found out that our competitors were selling just the things we did not handle, and making leaders of them, too, and the first thing we did was to put in a line of Paints; then we put in a line of Stoves; then got a line of Sporting Goods; then Automobile Accessories; then a good and complete line of Harness and Implements, and we now have to advertise most everything. That is our motto—"MOST EVERYTHING."

A Transaction in Automobile Blankets.

Last Saturday we got in a consignment of Automobile Blankets, and being the first in stock the foreman of that department asked me if I would assist him in marking them. I looked at the invoice and then at the goods and said, "These goods will stand a 50 per cent. profit—just 50 per cent." About the time we started to marking them a banker drove up to the store in his machine with his wife. Mr. ——— asked me if we had any Automobile Blankets, and I told him they had just come in. He picked out one, asked me what that was going to be, and I told him \$12 (it cost us \$8). He said, "That looks pretty good to me. Wifey, what do you think of that?" And she remarked that she thought it was beautiful. He picked out another one, which his wife also liked, at \$12, and then said that the driver should have one to cut off the wind from the front of the machine where he sat, which he picked out. This one was \$6.50 (it cost us \$3.25). Mr. ——— said, "All right, Mr. Jones, have these wrapped up and put in my automobile."

I would have worked three hours selling some contractor \$40 or \$50 worth of goods and made about \$5 on the transaction. That is about what we make after bid-

ding against all our competitors put together; I think about 10 per cent.

I made \$4 and \$4 and \$3.25—\$11.25 in about 13 minutes on those blankets. The banker had not got out of the store before Mr. ——— came in and wanted some Automobile Blankets. He chose one on which our profit was \$4. We had sold over half of our Blankets before they were checked up. It just so happened that a cold wave was predicted, and the next day was Sunday, and every one wanted to be protected against the wind while riding in the machines.

Introducing Specialties.

Another little thing we did I believe will help these merchants some. A young lady of our town, who lost her father a few months previous from consumption, was living with her mother, a very poor woman with several other small girls. This young lady was about 19 years old, delicate, but rather prepossessing, large for her age and had a good common school education. We did not need an employee, but I sent for her to come to see me. I said to her: "I understand your circumstances and sympathize with you. Did you ever think you could make a living selling goods?" She said that she had never thought of such a thing, but had hoped to get some money from some source so that she could finish her musical education and go on the stage as a singer. I said to her that to do so would be doing something that she ought not to do. "I know what your father died with; you know the tendency that you have, and I think you ought to have a position on the outside and get all the fresh air you can. Do that for 10 years anyway, then if you are sound you can take up your music."

She replied that that sounded very logical to her and asked what I proposed. I told her that we often had specialties in our store and could use clerks with common sense enough to put them before customers. We wanted the articles introduced, and if they didn't sell, introduce them anyway. She said: "All right, I will try it if you will suggest something to start on." I just happened to think of these Dover Shirt Waist Sets of Irons. I sent to the Dover people and got 250 sets and started this young woman out the morning after they arrived.

She took one set in a little black silk bag and to-day she is averaging 12 sets a day of those Irons—going to work at 9 o'clock, quitting at noon for lunch and generally stopping for the day at 4 or 5 o'clock in the afternoon. Her health is better than it was and our business has increased. Last week she sold 65 sets in five days and rested on Saturday. We give her \$9 a week and 15 cents per set on every one over 40 she sells each week.

The trouble is that good selling articles like these are kept on the shelves packed away and no one knows of them. We have come to this conclusion, that you have to advertise and get your goods before the people in some manner.

Coffee Percolators.

We put out another woman on Coffee Percolators. She put a little bottle of cream and a little sugar and teaspoon in her grip, and only asked the housewives that she visited to furnish the water. In most every case she sold these Percolators. She sold over 100, ranging in price from \$3 to \$11.50 apiece, and we have sold over 300 in our town.

When the salesman came in talking to me about these Percolators I told him that we had enough Coffee Pots already, that our buyer had us overstocked, and as to talking Coffee Pots to our customers at prices from \$3.50 to \$11.50 each, why they would faint. He told me how to sell them—that is, when a person came into the store for a Coffee Pot to take down one of the Percolators and make a cup of coffee for them in 20 min. Well, the result was that we sold about 400 of them.

Now Go After Profits Instead of Volume.

In our store we used to try to pile up our sales. We sold \$600,000 worth of goods a year, but we have got out all that stuff that needed volume and are now making sales of articles on which there is a profit. We tell traveling men who come into our store and want to sell us goods on which we are to make 5 or 10 per cent. to "Go

hence, Satan; we don't want you here." I went into a Hardware store in this town and told the proprietor that he ought to use our sign, "Most Everything." He said he bought only the best that money would buy, and I could see that because I knew the brands. If a man gets a tool at a cheap price—a cheap tool—if it don't suit him he is going to kick just as hard as if he had paid a big price for it, and the result is you are going to lose that customer for good.

Convention Notes.

The entertainment features were much enjoyed and included a smoker on Tuesday evening; a banquet tendered by the Hardware Jobbing houses of Jacksonville, the S. B. Hubbard Company, Florida Hardware Company and the Bond & Bours Company on Wednesday evening, and a river party, with music and refreshments, given by the Smedley-Rogers Company, Jacksonville Hardware Company, Florida Hardware Company, S. B. Hubbard Company, Bond & Bours Company, Towers Hardware Company and the Dozier & Gay Paint Company, all local houses, on Thursday evening.

The association will send several delegates to the next annual meeting of the national body at Denver, Colo., and it is expected in this connection that representatives of the Jacksonville Board of Trade will also make the trip, with a view to securing the national convention of 1911 for Jacksonville.

Sharon E. Jones, Richmond, Ind., member of the Executive Committee of the National Retail Hardware Association, speaking officially for that body, delivered a formal address, in which he touched on the work of the association and the ability of its officers in a very interesting way.

A telegram conveying greetings and best wishes from the Belknap Hardware & Mfg. Company, Louisville, Ky., was read at the opening session.

The subject of mutual insurance was attractively brought before the convention in addresses by W. P. Lewis, Huntingdon, Pa., secretary of the National and Pennsylvania Hardware Mutual Fire Insurance Companies, and C. A. Peck, Berlin, Wis., secretary of the Wisconsin Hardware Mutual Fire Insurance Company.

J. B. Gordon, secretary-treasurer of the Southern Co-operative Foundry Company, Rome, Ga., made an instructive address at the Tuesday morning session, which was listened to with close attention.

Secretary Jackson read the report reviewing the work and proceedings of the last annual convention of the National Retail Hardware Association at Milwaukee.

A very interesting and suggestive address on the "Difference Between Cheap and Good Hardware" was made by John Hall, foreign sales manager of the Simmons Hardware Company, St. Louis. The address will be given a place in our next issue.

THE SIMMONS HARDWARE COMPANY made elaborate preparations to welcome and entertain the visitors to St. Louis during the recent centennial of the city. At 821 Washington avenue they opened a display and reception room for the special benefit of their customers and their families and friends. These quarters were most attractively fitted up and brilliantly illuminated at night. The windows were fine examples of appropriate and effective arrangement. A feature of the display was the manner in which such articles as Auger Bits, Chisels, Knives, Spoons, &c., were kept in constant motion, use being made of an ingenious mechanism by which this was accomplished. This exhibit attracted a crowd day and night. Free telephone service was provided for the visitors, also writing desks and stationery. The company expressed themselves as amply repaid for any trouble or expense by the appreciation shown by the great numbers who enjoyed this hospitality.

BAKER & TAYLOR have established a retail Hardware business in Buffalo, Texas, handling Shelf and Heavy Hardware, Tinware and House Furnishings.



Corn Cutting Window Display of Schleyer & Barrere, Circleville, Ohio.

A Corn Cutting Window Display.

Husking Supplies Effectively Featured.

AT first thought it may appear useless to endeavor to interest the public in window displays depicting familiar scenes or suggestive of the daily toil. But all are not gifted with imaginative powers and as a result people like to talk about that with which they are the most familiar and enjoy commonplace reproductions for comparison with the real. This is enforced in the corn cutting scene illustrated herewith which recently occupied one of the windows of the Hardware store of Schleyer & Barrere, Circleville, Ohio, and attracted much attention. The display was arranged by Andrew Lynch, one of the clerks.

The floor of the window was covered with rich, black soil about 4 in. deep making it appear like a corn field. The boy had a corn knife in his hand with which he had cut a half shock of corn. The standing corn was in rows and between the rows were corn knives, binder twine, fodder squeezers, husking hooks, canvas gloves and harvest water kegs.

A Hallowe'en Window Display.

No Hardware Articles Shown in This Window, Which Was Designed Simply to Attract Attention to the Store and Its Other Windows.

AT this time last year the Jones Hardware Company, Richmond, Ind., arranged the Hallowe'en window display reproduced herewith. The company's store is located in the wholesale district of the city and it relies on attractive show windows to bring the people in its direction. This window did not advertise any line of goods handled by the company, but was designed simply as a catchy display to attract the notice of the public, the other show windows of the store exhibiting various lines of goods.

The pumpkin, or "Jack-o-lantern," was constructed of

wagon rims $4\frac{1}{2}$ ft. in diameter forming the ribs. Over this was pasted heavy building paper, painted with water color paint to imitate as nearly as possible the color of a pumpkin. A large banana stem was used to represent the stem of the pumpkin. The pumpkin was 5 ft. high and $5\frac{1}{2}$ ft. wide.

The nose was made of a large squash, which was hollowed out, nostrils cut in it and an electric light put



A Hallowe'en Window with Jack-o'-Lantern Made of Wagon Ribs and Heavy Building Paper, and Lighted with Electric Lamps.

inside. The mouth and the teeth were made of a large sheet of steel, the teeth being cut very irregularly and painted white, and the outside edge of the steel painted red to represent lips. The eyes were made of 6-in. glass balls painted white, with the pupils painted black and crossed. Inside of these glass eyes were "Skidoo" electric lamps, which produced the winking effect. The eyebrows were made of black curled hair placed over each eye, and the goatee was made of a bottle brush. The mouth was lined with red calico, and the tongue made of the same material stuffed with excelsior and protruding slightly from the mouth. The mouth was illuminated with electric lights, producing a most startling effect.

On either side of the pumpkin was a shock of corn, and the sign over the top of the window was a quotation from the Hoosier poet, James Whitcomb Riley: "When the frost is on the pumpkin, and the fodder's in the shock."

There was no background to the window; the display was so large that it filled the entire window, no background being needed. The window is 7 ft. wide and 10 ft. high. The company states that this was one of the funniest exhibits it ever had in its show windows, and produced a great deal of amusement for the children and even the grown-ups.

Requests for Catalogues, Etc.

REQUESTS for catalogues, price-lists, quotations, &c., have been received from the following houses, with whom manufacturers may desire to communicate:

FROM C. D. LINFESTY, who has recently engaged in business at 310 West Main street, Walla Walla, Wash., handling Hardware, Mechanics' Tools, Fine Cutlery, &c.

FROM McCLAVE LUMBER & HARDWARE COMPANY, which has engaged in business in McClave, Colo., handling Shelf and Builders' Hardware, Window Glass, Paints and Oils.

FROM DOUBEK & HAWKINS, who have engaged in business in Bay City, Texas, handling Shelf and Heavy Hardware, Stoves, Tinware, House Furnishings, Window Glass, Agricultural Implements, Paints, Oils and Sporting Goods.

FROM MURPHY HARDWARE COMPANY, which has opened a store at Chester, S. C., handling lines of General Hardware, Stoves and Sporting Goods. William H. Murphy, manager of the company, was formerly with De Haven-Dawson Company of Chester.

FROM PETER P. ROWAN COMPANY, New Orleans La., which has been incorporated with a capital stock of \$50,000, handling Heavy Hardware, Wagon Woodstock, Paints and Oils.

FROM R. J. HOWE & Co., who is opening an up to date Hardware store at Columbus, Ind.

C. C. GRAHAM, general sales manager, and J. F. Kane, assistant sales manager, of the Benedict Mfg. Company, maker of Silver Plated Ware and Metal Goods, East Syracuse, N. Y., have just started on a trip around the world in the interest of the company. They will visit Australia first, going by way of San Francisco, and making a stop at Honolulu, then taking the steamer to Sydney. From Australia they will go to Japan, and expect to return via London some time in the late spring.

THE DROP FORGING DEPARTMENT of Kraeuter & Co., Newark, N. J., was destroyed by fire on the 8th inst., with damage estimated at \$35,000. The company has already contracted for a new reinforced concrete building and expects to be in a position to resume the shipment of finished stock within a few weeks.

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The Metropolitan Hardware Company's Establishment

**An Interesting Booth in the Large Hudson Terminal Buildings, New York City
—A Miniature Hardware Store, Conducted on the Same Lines as
the Company's Main Store, for Supplying the Needs of
Commuters and Other Patrons of the Tunnels.**

Third and Concluding Article

With rare perception of the possibilities of future development, the Metropolitan Hardware Company secured space on the Hudson Terminal Building's concourse for a term of years, and opened a booth for the sale of Hardware on the concourse, between the Dey and Fulton street entrances. A conservative estimate of the number of people, largely New Jersey commuters, who pass through the concourse each day would be 75,000, and this number is increasing every week. Sixty per cent. of this number pass the booth. In contemplating the establishment of this branch of the company's store it was a serious question whether people would stop, going to or coming from their business, and make purchases. Since the booth was opened on July 19, the sales have increased each week in a gratifying manner, and dispelled any doubts as to the success of the enterprise. The company's main store is but one block from the terminal, and is connected by a direct telephone line.

Advertising the Booth.

For a week or more after the booth was opened, cards were distributed to passers by, on one side of which were time tables of tunnel trains while on the other side attention was called to the convenience and time-saving features of the booth, including prompt service, guaranteed goods and lowest prices. The point was emphasized that this was the first Hardware store encountered by passengers using the Terminal tunnels from New Jersey and the last one passed on their way home. It was made very plain that the company's store was only one block distant from the terminal.

How Customers Are Sent to the Main Store.

When any article or sizes of goods wanted by customers are not found at the booth they are telephoned for to the store and held until the customer calls for them at the booth, or if desired the goods are shipped direct from the store. **If, however, the customer wants to see the goods, he is accompanied by a boy from the booth to the store, and while they are on the way a telephone message is sent stating that a customer is coming and just what he wants.** It has been found that it pays to have a boy accompany a customer, rather than let him go by himself, as the former plan assures his getting to the right place instead of changing his mind and wandering off to some other store.

The Sort of Attention That Pays.

To show how this worked in one case: A comparative stranger in the city stopped at the booth to buy a single article, the desired size of which was not in stock. A boy was sent with the man, the name and size of the article telephoned, **and before the stranger left the store he purchased over \$30 worth of goods.** In this case, as in others, the stranger did not know that there was a retail store carrying such a variety of goods in the

lower part of the city. As a result the store business has been perceptibly increased since the booth was opened.

Arrangement and Special Features of the Booth.

An exterior view of the booth is given in Fig. 23. The structure is of metal, 22 ft. front and 27 ft. deep, pleasing architecturally, and made exceedingly attractive by numerous electric lights and the well arranged display of a large and varied line of goods. The front of the booth consists only of the metal frame work and is devoid of glass windows or doors, permitting an unobstructed view of the interior.

The quantity of goods accommodated in the limited space at command and the number of samples shown within the booth are worthy of note. This results from careful planning so that no space is wasted.

Showcases Which Count.

Plate glass upright show cases, one of which is shown in Fig. 24, cover each of the six posts and contain samples of Razors, Watches, Bar Strainers, Pliers and similar small articles. The cases have hinged wooden backs, covered with suitable material to show off the goods to advantage. These cases are 4 ft. high, 9 in. wide and 7 in. deep.

The small plate glass show cases resting on the base of the front are each 35 in. long, 7 in. deep, 4 in. high at the back and 2¼ in. high in front. These contain samples of Safety Razors, Shaving Brushes, &c.; the one shown in Fig. 25 is devoted to Revolvers.

All these cases were especially made to order, as was also the one for the rounding corner of the front, a view of which is shown in Fig. 26. This contains samples of Flat Plated Ware.

These showcases utilize otherwise undesirable surfaces and are perpetual advertisers of lines of goods which yield good profits. Two plate glass shelves, above and back of the posts, are used to display Alarm Clocks and other small articles without materially obstructing the view.

Between the posts at the right hand end of the booth can be seen samples of an extensive line of Dog Collars. Directly in front of this section, outside the booth, is a counter on which new goods are demonstrated.

Selling Goods From Trays.

The plan of selling goods from trays, which has proved so successful at the company's store, is in use at the booth. The trays can be seen in Fig. 23, a separate view of several of them being given in Fig. 27. The trays hold such lines as Padlocks, Tool Set Handles, Gimlets, Screwdrivers, Rules, Pliers, Wrenches, Tack Hammers, Kitchen Cleavers, Fishing Tackle, Toilet Paper Holders, Paint Brushes, Lawn Sprinklers, Ice Picks, Can Openers, Shoe Polish, &c.—such goods as have met with good demand at the company's main store.

The arrangement for sampling jointed Fishing Rods, shown in Fig. 27, is similar to that in the store. These

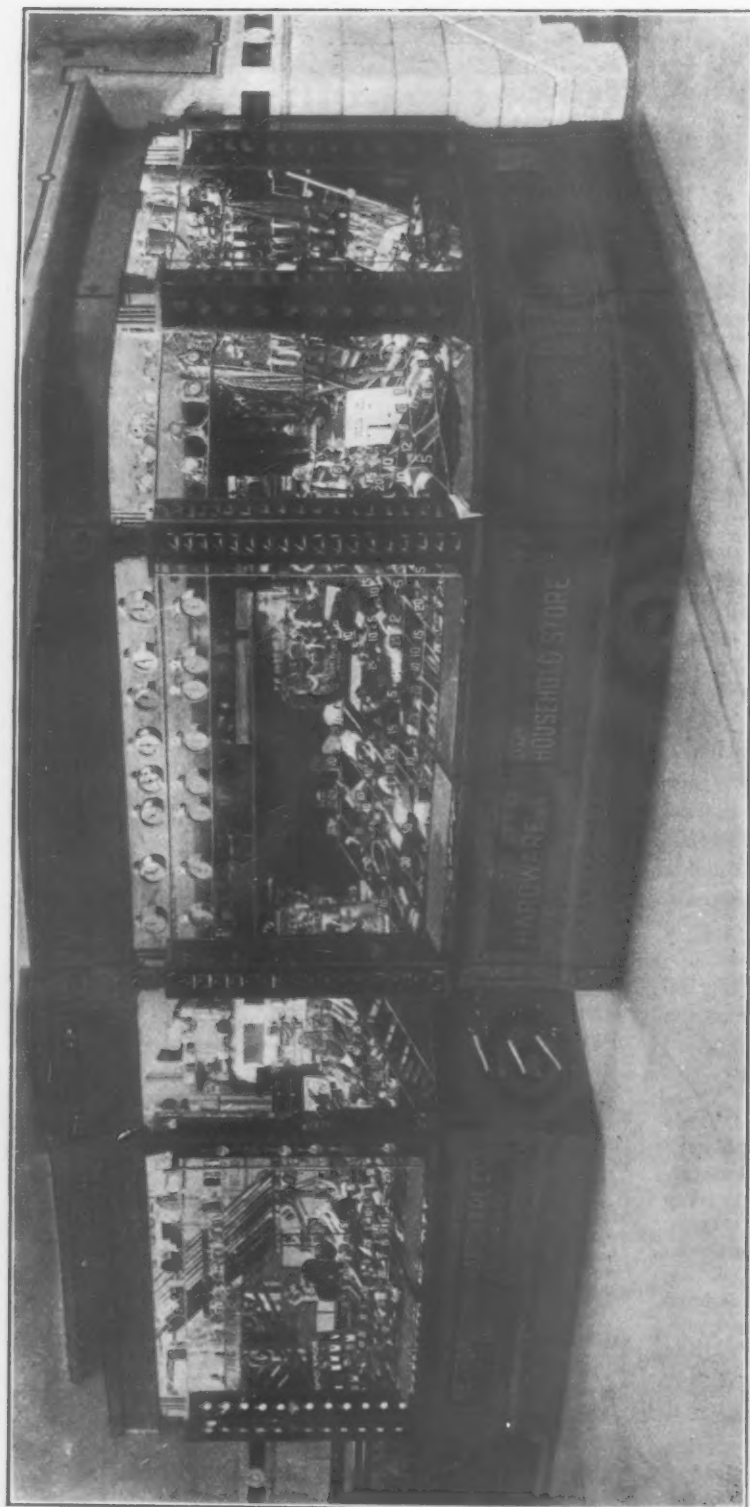


Fig. 23.—Metropolitan Hardware Company's Booth on the Concourse of the Hudson Terminal Buildings, New York City.

are near enough to the front so that customers standing outside the booth have an excellent view of them while they are not within reach.

A Rush Business.

In planning the arrangement of goods, the fact was kept in view that the busiest times would be during the commuters' rush hours, morning and evening; also that the majority of customers would require prompt attention, as most of them are expected to be at their places of business at a certain time each morning and have regular trains which they want to take each evening.

To this end, the variety of goods in the trays and those sampled, all with prices in plain figures, is so large that in many cases customers can point out what they want without bothering the salesmen with questions. This saves time for all concerned and facilitates making a large number of sales in a comparatively short time.

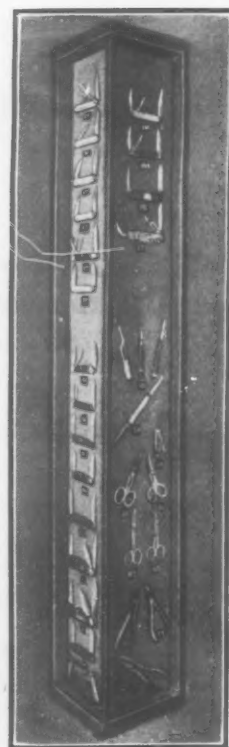


Fig. 24.—Detachable Upright Plate Glass Showcases on Posts, with Wooden Hinged Backs, 4 ft. High, 9 in. Wide and 7 in. Deep.

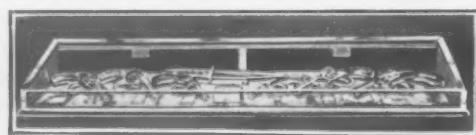


Fig. 25.—One of the Small Plate Glass Showcases Resting on the Base in Front of Trays, 35 in. Long, 7 in. Deep, 4 in. High at Back and 2 1/4 in. High in Front.

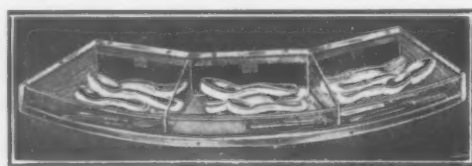


Fig. 26.—Semi-Circular Plate Glass Showcase Adapted for Rounding Corner of Booth, Containing Flat Plated Ware.

As shown on the floor plan, Fig. 28, there are drawers under the trays at the back and sides, sampled with the goods they contain. The location of other lines is also given, including Enamel Paints, Bar Glass Ware, Enamelled Ware, Bathroom Fixtures and Office Supplies. There are stands on the floor of the booth for the display of large articles.

Shelving.

A portion of the shelving on the north side of the interior of the booth is illustrated in Fig. 29. Because of the limited amount of room available for sampling and stocking goods, economy of space was necessary. The shelving and drawers extend along this side of the booth for 15 ft. The height of the base, in which are the drawers, is 34 in., and the depth is 31 1/2 in. The hinged lids over the drawers are 18 in. wide and 19 in. long, with samples on the under sides as well as on the tops, thus

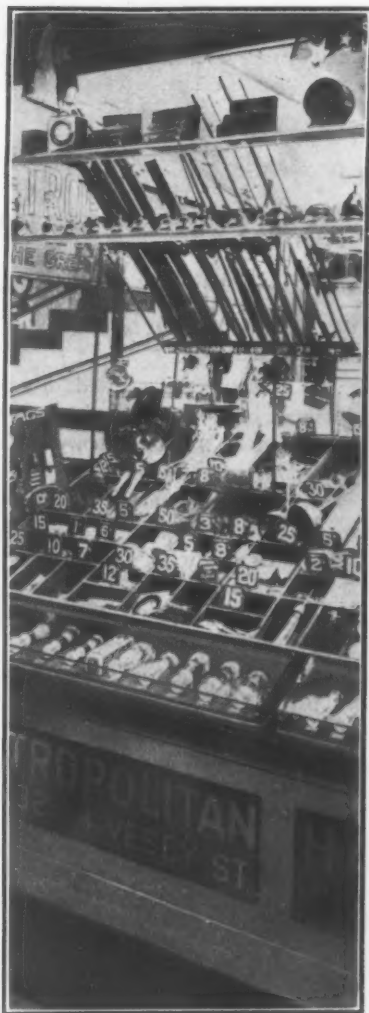


Fig. 27.—Arrangement of Jointed Fishing Rods, Over Trays, Showing Them to Good Advantage, with Prices Marked Under Each.

doubling the sampling capacity. The bins underneath the lids are divided by partitions to hold stock. Partitions in the drawers permit two or three different kinds of goods to be accommodated in each drawer. The salesmen have familiarized themselves with the location of the different articles, although they are not all sampled. The doors above the bins are $18\frac{1}{2} \times 38$ in. in size, sampled on both sides, as shown. These include mechanics' tools in large variety, such as Hammers, Hatchets, Wrenches, Screwdrivers, Auger Bits, Pliers, Chisels, &c. The interchangeable shelf drawers do not come to within 2 in.

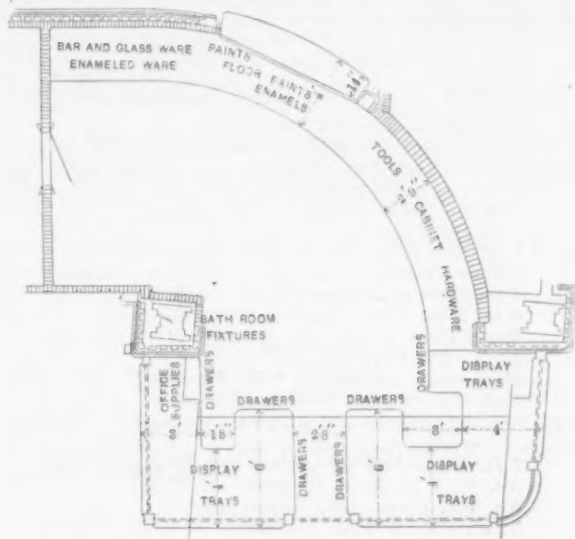


Fig. 28.—Floor Plan of Hardware Booth, with General Arrangement of Goods Indicated.

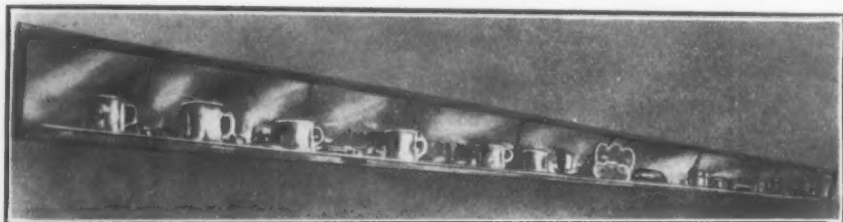


Fig. 30.—Shelf of Plate Glass, Backed by Mirror, Displaying Shaving Cups, Crumb Trays, Etc.

of the front, to permit the doors to close without having the samples on the inside of the doors striking against the drawer samples. At the booth is kept a sample of every tool carried at the company's store, marked with the store number of the tool. These samples are instantly detachable, so that any can be sold if necessary. When the line is too large to carry all sizes of any tool at the booth, the store prices and numbers of the full line are given in connection with the samples. This permits of telephoning the number of a tool to the store, and the tool can be sent to the booth, ready for

the customer when he calls. The telephone is used in the same way to order stock for the booth.

The ceiling over the space between Enamelled Ware and Bathroom Fixtures is not as high as the rest of the booth, this being under a stairway. This space is occu-



Fig. 29.—Shelving with Goods Sampled on Top and Under Surface of Bin Covers, Front and Back Side of Doors and on the Front of Drawers in Shelving and on the Drawers Under the Bins.

pled by metal shelving and drawers, and here duplicate stock is kept.

Above is a glass shelf, backed by a mirror, for the display of Shaving Cups, Crumb Trays and other articles of this character, as shown in Fig. 30. The flags and other decorations appearing in connection with the booth were in honor of the Hudson-Fulton celebration, which has recently been concluded.

The company has another booth at the Cortlandt

street end of the concourse devoted to Gas Goods. These are arranged in a similar manner to those shown in Fig. 2, in our first article, but on a much more elaborate plan. The line of goods carried in this booth includes Gas Fixtures, Gas Lamps, Portables, Mantles, Shades, Globes, Mica Canopies, a large variety of Gas Turners and Night Lamps. This display is brilliantly lighted day and night.

Price-Lists, Circulars, Etc.

Manufacturers in Hardware and related lines are requested to send us copies of new catalogues, price-lists, &c., for notice in this column and for filing in our Catalogue Department.

PERFECTION VACUUM CLEANER COMPANY, 31-35 South Clark street, Chicago, Ill.: Catalogues illustrating and describing portable and installed type of Vacuum Cleaners.

JACOB J. VOLLRATH MFG. COMPANY, Sheboygan, Wis.: Catalogue No. 46 devoted to Vollrath Ware, which includes White and White, Special Blue, Majestic and Speckled Gray and Ajax Wares. These cover a full line of Kitchen Utensils and Household Articles. In addition the catalogue illustrates Cast Iron Wares, embracing New Idea Kettles, Imperial Stove Hollow Ware, XX and X Stove Hollow Ware, Steel and Iron Cuspidors and Sinks.

LIGGETT SPRING & AXLE COMPANY, Pittsburgh, Pa.: Catalogue devoted to its line of Automobile Springs, including Full and Scroll Elliptic, Full Coach Scroll, Scroll Coach, Coach Platform, Semielliptic and Semielliptic ribbed, &c. In regular practice the company use the following three grades of steel: Open hearth carbon, crucible carbon and vanadium alloy.

SOUTHERN SHOVEL MFG. COMPANY, Gadsden, Ala.: Illustrated price-list of N. & M. Self-Sharpening Shovels and Spades, a line of Plain and Hollow Back Shovels, Spades, Scoops and Drain Tools.

KRAMER BROS. FOUNDRY COMPANY, Dayton, Ohio: 1910 Stove Repair catalogue, No. 8, devoted to Break-Off and Adjustable Stove Repairs, Stove Supplies or Trimmings, Casters, Stove Polish, Chimney Tops and Caps, Cement Tools, &c.

HARRIMAN MFG. COMPANY, Harriman, Tenn.: Catalogue D containing illustrations, descriptions and list-prices of lines of Cotton Planters, Harrows, Plows, Plow Stocks, Steel Shapes, &c.

D. W. BOSLEY COMPANY, Fulton and May streets, Chicago, Ill.: Catalogue devoted to Weather Strips, including Felt, Rubber in many forms, Rubber Window, Bar and Counter Cleaners and Rubber Floor Scrubbers.

AMERICAN STEEL & WIRE COMPANY, Chicago, Ill.: Illustrated catalogue devoted to Springs, of which an extended variety is made. The company states that as a manufacturer of all grades of steel from the raw material, it is in a position to meet varying requirements, and insure satisfactory results from the use of its products.

JOSEPH BARDSLEY, 147 Baxter street, New York: Catalogue illustrating and describing the Bardsley Reversible 1909 Liquid Door Check and Spring and the Bardsley Door Holder.

KANSAS CITY BOLT & NUT COMPANY, Kansas City, Mo.: Catalogue relating to Bar Iron, Bolts, Nuts, Rivets, Washers, Rods for buildings and bridges, Harvey patent Grip Thread Track Bolts, Standard Thread Track Bolts, Drift Bolts, Turnbuckles, Forgings, &c.

F. A. GODCHARLES COMPANY, Milton, Pa.: Price-list of Iron and Steel Cut Nails, Strap and T-Hinges and Hinge Hasps; also Plate Washers. The company states that all its products are made from new material rolled for the purpose.

W. BINGHAM COMPANY, Cleveland, Ohio: Holiday catalogue of Silver Ware for the 1909 season, illustrating Knives, Forks, Spoons, Ladles, Combination Sets in chest with drawer, Coffee, Soup, Orange, Berry, Nut or Salad

Spoons; Oyster, Individual Salad and Ice Cream Forks, &c. The company has also issued catalogue devoted to Hunters' Sundries, Guns, Rifles and Revolvers, and of Renaud Pocket Cutlery, as selling agents of the Ulster Knife Company.

Retail Store Prices on Hardware.

A Country Merchant's View of Figures Which Prevail in New York City.

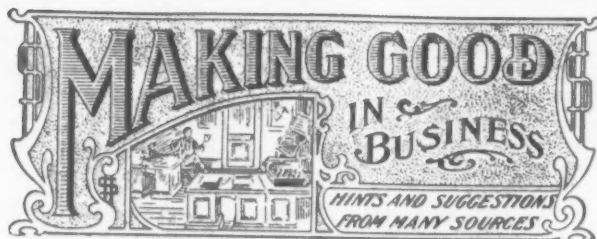
IN connection with the elaborate illustrated description of the arrangement of the Metropolitan Hardware Company's establishment of New York City in our issue, 14th inst., reference was made to the policy of the company in making prices that are intended to yield only a moderate percentage of profit. A list of a number of everyday selling goods was given with the intimation that the prices mentioned were lower than those generally obtained at other stores in New York City and surrounding territory.

This list has attracted the attention of a Hardwareman in a small town in Virginia, who considers his prices, of which he submits a number of examples, quite as low when location and other considerations are taken into account. The interesting letter of our correspondent is as follows:

Reading in *The Iron Age*, 14th inst., the account of the Metropolitan Hardware Company's store in the great city of New York and the list of prices at which it sold some goods, the thought came to me that here in the small town of — in the great valley of old Virginia, with only one line of railroad, I was selling similar goods at about the same figures.

I consider an article at 5 cents here as cheap as one in New York at 3 cents, when you take in the surroundings. I append a few of my prices from which you will see, I think, that New York with its population of several million people, has not very much to brag of over my place, with a population of less than 2000, in the way of prices at which people can buy their Hardware:

8 and 10 oz. Cut Tacks, 1 cent a paper.
2 papers of 500 Steel Tacks, 5 cents.
6 in. Screddriver, 10 cents.
Steel Nail Hammers, 25 and 40 cents.
1 in. Socket Firmer Chisel, 40 cents.
1/4 in. Carriage Bolts, up to 4 in., 2 cents.
5-16 in. Carriage Bolts, up to 3 1/2 in., 2 cents.
6 x 8 in. Wrought Steel Brackets, 10 cents per pair.
Carpenters' Chalk, White, 1 cent; Blue, 2 cents.
4 1/2 in. Door Locks, Porcelain Knob, 25 cents.
White Porcelain Knob, Japanned trimmings, 10 cents.
Screw Hooks and Screw Eyes, 4 to 10 cents per doz.
3 in. Bright Screw Hooks and Eyes, 2 for 5 cents.
4 in. Light Strap Hinges, with Screws, 8 cents.
Common Sad Irons, 5 cents per lb.
No. 0 Tubular Lanterns, 50 cents.
Zinc Oilers, 5, 7 and 10 cents.
No. 2 Claw and Half Hatchets, 50 cents.
18 in. Panel Saw, \$1.25.
26 in. good Hand Saw, \$1.
Tinners' Snips, \$1.25.
Iron Head Gimlet, 5 cents.
Cold Chisels, 1/2 in., 10 cents; 5/8 in., 15 cents.
Screw Wrenches, 8 in., 25 cents; 10 in., 35 cents.
6 in. Butcher Knives, 10, 15 and 20 cents.
6 in. High Grade Butcher Knife, 25 cents.
Taper Files, 4 and 5 in., 5 cents; 6 in., 8 cents.
10 in. Mill File, 15 cents.
High Grade Auger Bit, 1 in., 70 cents.
1 qt. Square Corn Popper, 10 cents.
Wrought Hooks and Staples, 3 1/2 in., 4 cents; 5 in., 5 cents.
6 in. Wrought Hooks, Hasp and Staples, 5 cents.
No. 68, 2 ft. Rule, 10 cents.
No. 103, Blued Steel Square, \$1.
10 qt. Flaring Pail, 10 cents.
13 in. re-tinned Basin, 10 cents.
Pocket Knives, from 10 cents to \$1.
Steel Knives and Forks, from 40 cents to \$1.50 a set.



The chief want of life is somebody who shall make us do the best we can. —Emerson.

Resolution.

Without the resolution in your hearts to do good work, so long as your right hands have motion in them, and to do it whether the issue be that you die or live, no life worthy the name will ever be possible to you; while in once forming the resolution that your work is to be well done, life is really won, here and forever.—John Ruskin.

Good Fellowship.

Good fellowship is as old as man. It is one of the elemental things—rooted in man with good and evil, love and hate. Its temples are wherever good men get together—its shrines and sanctuaries the hearts of men.

More than the impetuous comradeship of youth, it is the settled faith of men in men. Passing all boundaries of nation, creed or calling, it asks only the open heart, the honest purpose, the cheerful countenance.

Its password is the kindling eye, its pledge the hearty hand; its finest messages are unspoken. It is the golden age made manifest. Rites, religions, men and measures pass; good fellowship remains; for it is eternal love of life, eternal faith, eternal charity and cheer.—James Howard Kehler.

Faith in One's Self.

Have faith in yourself, young man. What others can do **you** can do, if you make up your mind that you can.

Don't imagine that the other fellow is a superior creature, and that you have got to step aside and let him pass you on the road to success.

Ten chances to one the other fellow is putting a mental premium on **your** ability and classifying **you** as a better man than **he** is.

That's the way of the world. When you and I were boys the other boys' apples were always the biggest and the sweetest, weren't they?

No; they were not.

But we **imagined** they were, and that settled it.

And now that we are classed among the grown-ups the other grown-ups are better off than we are—abler intellectually, physically, resourcefully.

That is, we **think** they are.

Oh, I **know**. I'm still a young man myself, and the greatest enemy I have ever had to combat is Fear—fear of the other fellow's superiority, and my own lack of faith in myself.

And I know a great many young men—and some old ones—who are in the same boat.

However, I have discovered in the hard school of experience that if a man hasn't faith in himself other men instinctively know it and govern their estimate of him accordingly.

So have faith in yourself. Believe in yourself. Trust yourself. Rely on yourself. Be yourself. Any way, you are as good as the next man—and, perhaps very much better.

Don't get the idea into your head that all of the worth-while things in the world are beyond you. **They are not**. But they **will be** until you bring yourself around to the point where you can size up your own powers and abilities and **know yourself**.

Then, when you have found your real self—when you have learned that **difficulties are difficulties only so long as we view them as such**—you will concurrently come into an abiding faith in your own ability to dare and do.

But first of all **you** must have faith in **you**.—Jerome P. Fleishman.

Conduct of Employees Outside of Business Hours.

In *The Iron Age*, 14th inst., 10 maxims adopted by a prominent mercantile house were published, one of which was as follows:

It is none of our business what you do at night, but if dissipation affects what you do next day this is our business and you won't last long with us.

A retail Hardware house in New York State takes issue with this declaration and makes the point that it is the firm's business how its employees conduct themselves at night. They write as follows:

With reference to the inclosed clipping, we claim it is an error. It is the business of the employer to know what his men are doing nights. It discredits the house to have an employee, even if he does his work well, whose associates are of a loose-jointed character. An employer has the right, morally as well as financially, to know that his help are socially well kept. The old sayings, "Evil communications corrupt good manners," and "A man is known by the company he keeps," reflect upon the employer.

Manning, Bowman & Co's. New Catalogue.

MANNING, BOWMAN & CO., Meriden, Conn., and 25 West Broadway, New York, have just issued a finely illustrated, descriptive catalogue No. 56 containing more than 200 pages. In it are shown very comprehensive lines in nickel and silver-plated finishes on planished copper, nickel, silver and white metal of Chafing Dishes and accessories, the Manning-Bowman Alcohol Gas Stoves, Heaters for operation with denatured alcohol, Kettles, Sauce Pans, Flagons, Spoons, Forks, Skimmers, Electric Stoves and Tea Percolators and Urns, Tea Ware, Table Kettles, Camp Percolators, Travelers' Companions, Bean Pots, Pie Dishes, Casserole Dishes, Waiters' Trays, Crumb Sets, Steak, Fish and Chicken Holders, Hotel Ware, Ivory Enameled Ware, Decorated Ware, Bath Room specialties and other goods of like nature, a large proportion of which may be used in connection with denatured alcohol, many being specially adapted to the fuel.

THE incorporation known as the Cole Mfg. Company, Chicago, maker of Cole's Hot Blast Coal Heaters, Cole-ized Steel Hot Blast Ranges and Air Tight Wood Heaters, has been dissolved and is succeeded by the Cole Mfg. Company, a copartnership, not incorporated, which will continue the business under the same management and with the same capital as heretofore, assuming all contracts, liabilities and obligations of the corporation which it succeeds.

THE JOHN SOMMER FAUCET COMPANY, Newark, N. J., has purchased the Metal Key Faucet business of the Boston & Lockport Block Company and the Cedar Faucet business of the Burnside Mfg. Company. The John Sommer Faucet Company will continue to manufacture these Faucets in the same grade as formerly, making the same prices and terms.

Net Weights in Paints.

AT a meeting of the Eastern Paint Manufacturers' Association, held early in October, the following resolution was adopted relating to Mixed Paints:

Resolved, That in order to secure a more uniform practice in the trade in reference to weights and measures, and also to guard against misrepresentation, this association goes on record as favoring a law, both State and national, requiring net weights and full measures, and providing against misbranding and mislabeling.

It is understood that a copy of this resolution was sent to the Middle Atlantic States Paint Association for consideration. It should be stated that some of the largest Paint manufacturers are not members of these or other associations, and those makers who are do not always consider themselves bound by resolutions passed by an association.

Net and Gross Weight Packages.

Up to the present time manufacturers who sell goods in States having Net Weight Paint laws, put up their goods in net weight packages. Such concerns have advanced prices from 12 to 20 per cent. to cover a much smaller per cent. of increase in the quantity of material. Manufacturers who have comparatively little business in net weight States, put up net weight packages for such trade and continue selling gross weight packages in other States. Some manufacturers of White Lead in Oil also are putting it up in net weight packages.

A number of these same manufacturers have been in the habit of putting up full measures, which include packages of Turpentine, Varnishes, Shellacs, Floor Stains, Enamels, &c.

The Manufacturers' View.

There is no doubt that in the past various manufacturers have skimmed more than others in the quantity of Paint put in gross weight cans, and these are probably the ones that have advanced prices the most. Certain manufacturers view net weight legislation unsympathetically, and claim that the consumer now pays more for what he gets in net weight packages than he paid for the quantity he used to get in gross weight packages. They naturally object to the trouble and expense of changing the size of cans to conform to the net weight law.

Retail Merchants' Experience.

By some of the retail trade net weights are said to disrupt business relations, and a return of gross weights is urged. A consumer, for example, has, perhaps, been in the habit of paying a merchant 15 cents for a can of Burnt Umber marked 1 lb. The merchant puts in net weight goods, and is obliged to charge 17 or 18 cents for a can of Umber, to which the customer objects, being satisfied with the quantity he had been in the habit of paying 15 cents for. The merchant naturally desiring to do business along the lines of the least resistance is apt to prefer gross weights.

Public Sentiment.

There is obviously another side to the question, in which the consumer is to be considered by law without regard to the feelings of merchants or manufacturers. In a number of States there are laws enforcing a regulation size of baskets in which berries are sold, and inspectors are employed to see that just weights and measures are universally used. The growth of public sentiment regarding the use of honest weights and measures by which food is sold has been gradual, and it seems not unlikely that the public in time will demand the same treatment from Paint manufacturers as they do from tradespeople.

W. A. ROSS & BROTHER, 11 South William street, New York, are now in a position to execute promptly orders for Sash Weights, which service was temporarily interrupted by a fire in their plant September 2.

THE RUGG-BALL MFG. COMPANY has recently moved from Waterville, Quebec, and is now permanently located

in Sherbrooke, Quebec, where it has improved facilities for turning out Hand Hay Rakes in large quantities. The company will continue to make a specialty of its patent Steel Tube Bow Hay and Lawn Rakes, and will add a line of Wood and Steel Snow Shovels, similar to the popular patterns used in the States. Grocery Delivery Baskets, Broom Handles and other Wooden Specialties will also be made.

The McKinnon Dash Company.

The McKinnon Dash Company, Buffalo, N. Y., manufacturer of dashes and fenders, &c., for carriages and automobiles, is introducing a large line of dashes, with new line rails welded solid to the dash frame. The rails are furnished either japanned, nickel plated or brass plated.

The Bridgeport Wood Finishing Company's Products.

The Bridgeport Wood Finishing Company, New Milford, Conn., manufacturer of Wheeler's wood filler, Silex and Bridgeport standard paint and wood finishing products, issues a number of attractive booklets covering modern artistic effects in wood finishing, modern floor finishing and prepared paint; also a catalogue and price-list of paint and wood finishing products. In connection with its comprehensive plan for co-operating with the retail merchant in the sale of its products, the company is preparing for retail merchants' use attractive signs and finished wood samples.

Candle Holders and Sticks and Match Stands.

The Searls Mfg. Company, Newark, N. J., for which Frederick J. Klages, 127 Duane street, New York, is sales agent, has added considerably to its line of bathroom fixtures and allied goods, such as candle holders, match holders and ash trays, &c. In candle holders there is a new assortment of five sizes in polished brass, having circular bases with flaring sides, about $\frac{3}{4}$ in. deep, and a range of diameters from $3\frac{1}{2}$ to $8\frac{1}{2}$ in., with finger holders and thumb rests. There is also a group of ornamental candlesticks, consisting of about 25 new patterns, some after Russian designs and others of antique pattern. There is also a match stand with circular cigar rests, one at each side, in both oval and round patterns, polished and scratched brass and nicked finishes.

The New York Revolving Portable Elevator.

The New York Revolving Portable Elevator Company, 450-454 Princeton avenue, Jersey City, N. J., is manufacturing an elevator or tiering machine, designed for saving labor and economizing space in warehouses where heavy or light boxes, bales, barrels and all kinds of packages are stored; also for elevating packages when loading them on drays, &c. The device may also be used in repairing and erecting shafting, hangers and pulleys. The base of the elevator is malleable iron, with three wheels fitted to the bottom section of the base and the elevating structure to the top section of the base while between the two is fitted a ball bearing race. The revolving base makes it possible to load from either direction in narrow aisles and also to unload at any point of the compass. The extreme circle described in making a complete revolution is 4 ft. 2 in. in diameter. The elevator is operated by a crank and cog wheels. The brake is made of a flat steel spring wound around two drums, and by a slight pressure of the hand on the brake lever a load of 1200 lb. or less may be lowered at any desired speed or stopped and held at any point. The ratchet, which is designed to catch the load at all points, is so constructed that the operator is compelled to remove the crank from the shaft and place it on the pawl shaft in order to lower the platform, to eliminate all possibility of the crank hitting the operator when lowering the

platform. The height over all elevators are made is any fraction of a foot desired under 12 ft. The platform only lifts to within 20 in. of the top. A hinge is located on the elevating structure, 6 to 6½ ft. from the floor, according to the height of machine, to allow the upper portion to be folded back so as to be taken through a doorway or on a freight elevator.

The Superior Window Screen Frame.

The window screen frame here shown is made by the Continental Company, Detroit, Mich. It is designed for convenient assembling and is of simple but substantial construction. The body of the frame is made from selected kiln dried lumber, the sticks being 7/8 x 1 1/8 in. It is reinforced by galvanized steel corners and lifts.

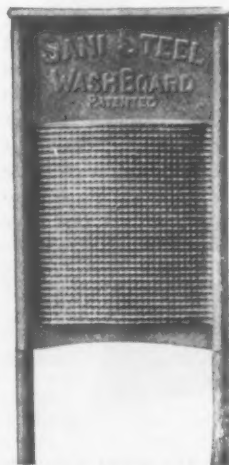


Superior Window Screen Frame Reinforced by Galvanized Steel Corners and Lifts.

It is packed one set in a box, with necessary screws and nails and full printed directions for putting the frame together. This is a simple operation and no particular skill is required to perform it. Grooves are cut in the outer edges of the side pieces and side strips for fastening to window casings are supplied, as are also moldings for covering the edge of the wire cloth. The frames are finished either in walnut stain or natural finish in the white. Walnut stain is always furnished unless otherwise specified. Sizes range from 36 x 36 in. up to 36 x 84 in.

The Sani-Steel Washboard.

The washboard shown herewith is made of one piece of sheet steel by the Kanneberg Roofing & Ceiling Company, Canton, Ohio, which claims that it is odorless, sanitary, strong, light in weight, and also that it will not shrink, swell, get out of shape, warp or rust. The board is pressed out of one piece of sheet steel, heavily galvanized; has a metal rubbing board and large and well drained soap dish. In size and shape it is very much like a good wooden board, and costs no more. The coating is the special point, it is remarked, the heavy galvanized coating being put on the stamped and formed board the last thing. The company states that galvanizing after forming the board makes the coating absolutely permanent, and that such a board will wear not less than 10 years. The board has a bright flaked finish, front and back, making an attractive appearance.



The Sani-Steel Washboard.

The Knickerbocker Spraybrush.

Combining in one article spray, shampoo, massage and complexion brush, the Progress Company, 504-515 Rand-McNally Building, Chicago, is offering the rubber spray brush here illustrated. The brush, which is circular in form and made from high grade Para rubber, is

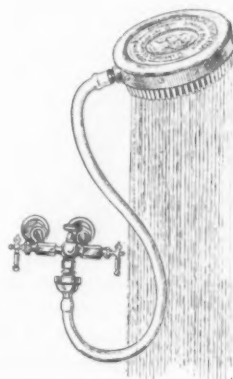


Fig. 1.—The Knickerbocker Spraybrush Attached to Bath Faucet.

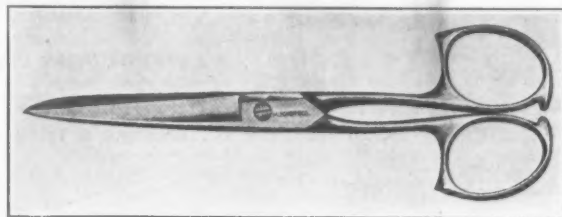


Fig. 2.—The Spraybrush as Held in the Hand for Massage Use.

referred to as an ideal bath appliance. Having soft rubber teeth, it is especially effective as a shampoo brush. The brush itself is 3½ in. in diameter and contains 325 hollow rubber teeth through which water is sprayed. The entire outfit consists of one of the brushes, 6 ft. of fine white rubber tubing and one single faucet connection. A siphon attachment can be supplied for homes having no bathrooms.

Tree Brand Scissors.

Hermann Boker & Co., 101-103 Duane street, New York, have recently placed on the market a new pattern high grade line of scissors in their long established Tree brand. It is designated by the general number 7234, and is made in regular ladies' scissors in 4 to 6 in. sizes inclusive, button hole style in 4-in. length, nail scissors, 4 in., and the pocket form in 4, 4½ and 5 in. lengths over



Tree Brand Ladies' Scissors with Patent Bows.

all. The patent obtained relates to the bows. A feature of the design also is the delicacy of the lines and generally handsome appearance of the goods, which are made at their works in Solingen, Germany. The bows are nickel plated and blades finely polished. The line mentioned is in the best quality, and branded as described; but to meet an insistent demand for a grade of lower priced scissors the line is likewise made in a second quality.

The Smith & Wesson .38 Perfected Revolver.

Smith & Wesson, Springfield, Mass., are offering the .38-caliber revolver shown herewith. It is alluded to as combining two of the firm's arms—the .38-caliber double action and the .32-caliber hand ejector revolvers. The cylinder in the revolver illustrated is perfectly locked to assure proper alignment with the barrel. The rebounding block guards against accidental discharges. The shells are automatically extracted. Among the new features embodied in the .38-caliber revolver are its heavier frame, its frame and frame guard in one, its barrel and sight in one, and its double locking device, the

latter preventing breaking unless the thumb piece is pushed. In this model, for the first time it is explained, the flat springs have been replaced by serviceable spiral springs. The revolver is supplied in either nickel or blue



The Smith & Wesson .38 Perfect Revolver.

finish, 3½, 4, 5 and 6 in. barrel. The ammunition adapted to this model is the .38 Smith & Wesson, containing 15 grains of black powder and 140-grain bullet, either grooved or self-lubricating.

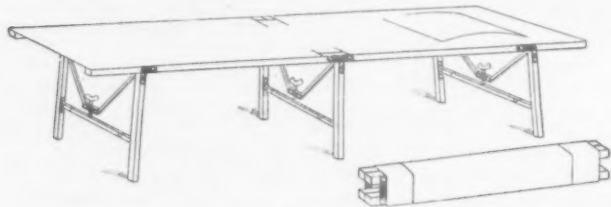
The Drum Head Cot No. 30.

The Indiana Bent Rung Ladder Company, Indiana, Pa., is offering the cot shown herewith, for military or camp use, military hospital service, &c. The frames are made of selected air dried hard woods, with Bessemer steel and malleable iron fittings. The cover is of best quality 12-oz. double filled brown duck. When opened a cot measures 6 ft. 6 in. in length, 2 ft. 4 in. in width and stands 18 in. high. When folded, as shown, it is 3 x 5 x 39 in. The cot weighs 19 lb. and is guaranteed to support 1000 lb. The cots are also made 3 ft. wide. They are strong and light, sit firmly on the ground, and when in use the canvas cover may be made as tight as a drumhead, it is explained, by the spreader arms. When the cover stretches or sags the adjusting screws of the spreader arms are turned, which pushes the arms



The C. & F. Safety Corn Knife with Double Concaved Blade, Shaped So That It Must Cut Upward.

further apart at the top and widens the frame, thus tightening the cover, so that the cot becomes a trifle



The Drum Head Cot No. 30.

wider with use. Another cot is made, No. 31, weighing 22 lb., constructed in the same manner as the one illus-

Shears for Use by Tinnerns, Furnacemen and Farmers.

Benj. P. Forbes, 409 Superior avenue, N. W., Cleveland, O., is putting on the market the shear illustrated herewith. The blade is of fine tempered steel and the handles of heavy cast iron japanned. It is a shear which may be used in cutting sheet metals up to 18-gauge, and



Shears for Use by Tinnerns, Furnacemen and Farmers.

on account of the curved surface of the blade it is said to be equally effective on round or curved surfaces and in cutting straight or circular work. It is explained that the shear is especially valuable in cutting pail and boiler bottoms and in making down spout connections with eaves troughs, and tearing up old tin roofs, opening tin cans, &c. It is said that farmers will find it a handy tool for trimming shrubs.

The C. & F. Safety Corn Knife.

The Cassady-Fairbank Mfg. Company, 6106-6130 La Salle street, Chicago, Ill., is offering the C. & F. safety corn knife. It has a keen razor blade, referred to as being of the finest surgical steel, double concaved and shaped so it must pare up. It is blunted for use on in-growing nails. The rounded point of the blade is for digging out the corn roots. It is pointed out that the knife will not slip or cut deeply, but that it slices up and only

at the point of contact with the corn or callous places. The total length of the device, including the aluminum handle, is 5½ in.

The Stevens Latest Telescope.

The J. Stevens Arms & Tool Company, Chicopee Falls, Mass., is putting on the market the telescope illustrated herewith, to be used in conjunction with the company's No. 70 visible loading repeating rifle. The telescope is 19½ in. long, having a power of three diameters; sight relief 4¾ in., and the rear end of the scope is in front of the breech block and out of the way of the shell. The rear mount is made to go on the barrel in place of the regular rear sight, and the screw that holds the rear



The Stevens Latest Telescope for Use in Connection with No. 70 Visible Loading Rifle.

trated, with the exception that the center pair of legs and spreader arms are omitted. Instead an interlocking joint is used, with a dead head, making a truss whereby the cot rail is made twice as strong as it would be if left in one continuous piece. The cots are regular chair height, making them comfortable as seats as well as beds.

sight will secure the rear mount in the same manner. The front mount is the company's new patent split dovetail mount, with a screw for locking it securely in the front sight slot. The telescope can be mounted with the aid of a screw driver, and can be easily and quickly removed and the regular sights replaced when desired.

N. & M. Self-Sharpening Shovels and Spades.

The Southern Shovel Mfg. Company, Gadsden, Ala., is manufacturing self-sharpening shovels and spades, plain back, long and D handled, in Perfection and Faultless brands. In construction a piece of hard crucible steel is welded to the upper side of a softer steel shovel blank. The back of the shovel being of comparatively soft steel and constantly meeting the resistance of whatever substance the tool is working in, naturally wears first, keeping, it is explained, a good straight, sharp edge. It is pointed out that the tools have particularly thick center and are extra strong at the root of the strap designed to strengthen these places. The goods are guaranteed to withstand the most severe tests.

Improved Round Adjustable Dies.

The A. J. Smart Mfg. Company, Greenfield, Mass., maker of screw cutting tools, has put on the market a line of improved round adjustable dies, as shown herewith. The dies are sawed through on one side, and drilled out and spring tempered on the opposite side.

The superior adjustment of this die consists of a taper head screw of the proper taper to get a quick and positive adjustment which screws into a cone shaped nut of the same taper as on the head of the screw. When the screw is turned to the left the spring temper causes the die to close, thus making it cut smaller. By turning the adjusting screw to the right the die is spread and cuts



Two Views of Improved Round Adjustable Dies.

larger. One of the principal advantages of this die is the fact that it may be adjusted from the face without being removed from the holder in which it is being used. The dies are made in the following diameters, 13-16, 1, 1 15-32, 1 1/2 and 2 in.

PAINTS, OILS AND COLORS**Animal, Fish and Vegetable Oils—**

	gal.
Linseed, Western, Raw.....	bbl. lots
State, Raw.....	.62 @ .63
City Raw.....	.63 @ .64
Boiled, 1c gal. advance on Raw.	
Raw, Calcutta, in bbls.....	.75 @ .
Lard, Prime Winter.....	1.02 @ 1.08
Extra No. 1.....	.59 @ .60
No. 1.....	.50 @ .52
Cotton-seed, Crude, f.o.b. mill.....	.54 @ .55
Summer, Yellow, prime.....	.67 @ .68
Summer, White.....	.74 @ .75
Yellow, Winter.....	.74 @ .75
Tallow Oil, Acidless.....	.57 @ .58
Menhaden, Brown, Strained.....	.30 @ .31
Northern, Crude.....	.24 @ .
Southern.....	.24 @ .
Light Strained.....	.30 @ .31
Bleached Winter.....	.32 @ .
Extra Bleached Winter.....	.34 @ .
Cocanut, Ceylon.....	.10 @ .11
Cochin.....	.10 @ .
Cod, Domestic, Prime.....	.38 @ .
Newfoundland.....	.40 @ .42
Red Blaine.....	.48 @ .51
Saponified.....	.10 @ .11
Olive, Yellow.....	1.30 @ .
Neatsfoot, Prime.....	.58 @ .62
Palm, Lagos.....	.10 @ .11

Mineral Oils—

	gal.
Black, 29 gravity, 25 @ 29 cold test.....	.12 1/2 @ .13
29 gravity, 15 cold test.....	.13 @ .13 1/2
Summer.....	.12 @ .12 1/2
Cylinder, light filtered.....	.20 @ .20 1/2
Dark, filtered.....	.17 1/2 @ .18
Paraffine, 903-907 sp. gravity.....	.14 @ .14 1/2
903 sp. gravity.....	.13 @ .13 1/2
903 sp. gravity.....	.10 1/2 @ .11
Red.....	.13 @ .13 1/2

Miscellaneous—

	ton
White, Foreign.....	\$18.50 @ 20.50
Amer., Roasted.....	32 ton 17.00 @ 18.00
Off color.....	32 ton 12.50 @ 15.00
Chalk in bulk.....	30 ton 3.00 @ 3.10

	gal.
China Clay, Imported.....	100 ton 11.50 @ 18.00
Cobalt, Oxide.....	100 lb 1.45 @ 2.60
Whiting, Commercial.....	100 lb 45 @ 50
Gilders.....	100 lb .52 @ .61
Ex. Gilders.....	100 lb .56 @ .68

Putty, Commercial—

	100 lb
In bladders.....	\$1.70 @ 2.00
In bbls. or tubs, 100 lb.....	1.20 @ 1.45
In 1 lb to 5 lb tins.....	2.65 @ 3.25
In 1 1/2 to 50 lb tins.....	1.50 @ 1.90

Spirits Turpentine—

	gal.
In Oil bbls.....	.61 @ .61 1/2
In Machine bbls.....	.61 1/2 @ .62

Glue—

	lb
Cabinet.....	.12 @ .15
Common Bone.....	.74 @ .9
Extra White.....	.18 @ .24
Fish, liquid, 50 gal. bbls., per gal. lon.....	.60 @ .120
Foot Stock, White.....	.12 @ .14
Foot Stock, Brown.....	.9 @ .11
German Common Hide.....	.10 @ .12
German Hide.....	.12 @ .18
French.....	.10 @ .40
Irish.....	.13 @ .16
Low Grade.....	.10 @ .12
Medium White.....	.14 @ .19

Gum Shellac—

	lb
Bleached, Commercial.....	.16 @ .17
Rose Dry.....	.20 @ .21
Button.....	.20 @ .25
Diamond I.....	.24 @ .30
Pine Orange.....	.18 @ .20
A. C. Garret.....	.18 @ .17
Light Orange.....	.17 @ .19
Kala, Button.....	.13 @ .15
D. C.....	.23 1/2 @ .21
Octagon B.....	.20 @ .22
T. N.....	.14 @ .16
V. S. O.....	.21 1/2 @ .22

Colors in Oil—

	lb
Black, Lampblack.....	.12 @ .16
Rine, Chinese.....	.36 @ .41
Rine, Prussian.....	.32 @ .36

	lb
Blue, Ultramarine.....	.13 @ .16
Brown, Vandyke.....	.11 @ .14
Green, Chrome.....	.12 @ .16
Green, Paris.....	.12 @ .24
Sienna, Raw.....	.12 @ .15
Sienna, Burnt.....	.12 @ .15
Umber, Raw.....	.11 @ .14
Umber, Burnt.....	.11 @ .14

White and Red Lead, &c.—

	lb
Lead, English White, in Oil.....	9 1/2 @ 9 3/4
Lead, American White:	
500 lb kegs.....	6 1/2 @ 6 3/4
Dry and in Oil, 25 and 50 lb kegs.....	7 @ 7 1/2
Dry and in Oil, 12 1/2 lb kegs.....	7 1/2 @ 7 3/4
In Oil, 25 lb tin pails.....	7 1/2 @ 7 3/4
In Oil, 12 1/2 lb tin pails.....	7 1/2 @ 7 3/4
In Oil, 1, 2, 3 and 5 lb tin cans, as't.....	8 1/2 @ 8 3/4
Red Lead and Litharge:	
In 100 lb kegs.....	7 @ 7 1/2
In 25 and 50 lb kegs.....	7 1/2 @ 7 3/4
In 12 1/2 lb kegs.....	7 3/4 @ 7 1/2
In lots of less than 500 lbs. 1/2 c @ 1 lb advance over above prices of White and Red Lead and Litharge	
Lead, American, Terms: On lots of 500 lbs and over, 60 days, or 2% for cash if paid in 15 days from date of invoice.	

Zinc, Dry—

	lb
American, dry.....	5 1/4 @ 5 1/2
Red Seal (French process).....	6 1/2 @ 7
Green Seal.....	7 1/4 @ 7 1/2
German Red Seal (French process).....	7 1/4 @ 7 1/2
Green Seal.....	7 1/2 @ 8
White Seal.....	8 1/2 @ 9
French, Red Seal.....	7 1/2 @ 8 1/2
Green Seal.....	10 @ 10 1/2

Dry Colors—

	lb
Black, Carbon.....	.5 @ .10
Black Drop, American.....	.3 1/2 @ .8

	lb
Black Drop, English.....	.5 @ .15
Black, Ivory.....	.16 @ .20
Lamp, commercial.....	.3 @ .5
Blue, Celestial.....	.1 @ .6
Blue, Chinese.....	.30 @ .31
Blue, Prussian, Domestic.....	.28 @ .30
Blue, Ultramarine.....	.5 @ .15
Brown, Spanish.....	1/2 @ 1
Carmin, No. 49.....	2.65 @ 2.75
Green, Chrome, ordinary.....	3 1/2 @ 5
Green, Chrome, pure.....	.17 @ .25
Metallic Paint, lb ton.....	\$16.50 @ \$22.00
Brown.....	\$14.00 @ \$18.00
Red.....	\$12.00 @ \$15.00
Ocher, American.....	1 @ 5
American Golden.....	1 1/4 @ 2
French.....	3 @ 4
Foreign Golden.....	10 @ 12
Orange Mineral, English.....	12 1/2 @ 13
French.....	12 @ 13
German.....	8 1/2 @ 10
American.....	5 @ 7
Red, Indian, English.....	3 @ 3 1/4
American.....	4 @ 10
Red, Turkey, English.....	7 @ 10
Red, Tuscan, English.....	1 @ 10
Red, Venetian, Amer.....	100 lb \$0.75 @ 1.50
English.....	100 lb \$1.15 @ 1.60
Sienna, Italian, Burnt and Powdered.....	3 @ 9
Italian, Raw, Powdered.....	3 @ 7
American, Raw.....	2 1/2 @ 3
American Burnt and Powdered.....	18.00 @ 25.00
Talc, French.....	100 lb 15.00 @ 25.00
American.....	100 lb 30 @ 1.00
Terra Alba, French.....	100 lb .80 @ 1.00
English.....	100 lb .70 @ .80
American.....	100 lb No. 1, .70 @ .80
American.....	100 lb No. 2, .60 @ .65
Umber, Tkey, But. & Pow.....	2 1/2 @ 3
Turkey, Raw and Powdered.....	2 @ 2 1/2
Burnt, American.....	12 1/2 @ 13
Raw, American.....	2 @ 2 1/2
Yellow, Chrome, Pure.....	2 @ 7 1/2
Oxide, Red, American.....	.2 @ 7 1/2
Vermilion, English, Imported.....	\$0.90 @ 1.00
Chinese.....	

THE IRON AGE

The oldest paper in the world devoted to the interests of the Hardware, Iron, Machinery and Metal Trades, and a standard authority on all matters relating to those branches of industry.

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Current Hardware Prices.

General Goods.—Goods which are made by more than one manufacturer are printed in *Italics*. The prices named represent those obtainable by the fair retail Hardware trade, whether from manufacturers or jobbers. Very small orders and broken packages often command higher prices, while lower prices are usually given to larger buyers.

Special Goods.—Quotations printed in small type (Roman) relate to goods of particular manufacturers, who request the publication of the prices named and are responsible for their correctness. They usually represent the prices to the small trade, lower prices being generally obtainable by the fair retail trade, from manufacturers or jobbers.

Range of Prices.—A range of prices is indicated by means of the symbol @. Thus 33 1/4 @ 33 1/4 & 10% signifies that the price of the goods in question ranges from 33 1/4 per cent. discount to 33 1/4 and 10 per cent. discount.

Names of Manufacturers.—For the names and addresses of manufacturers see the advertising columns and also THE IRON AGE DIRECTORY, issued annually, a book of 376 pages, which is sent free of charge to every subscriber to *The Iron Age*. It gives a classified list of the products of our advertisers and thus serves as an up-to-date DIRECTORY of the Iron, Hardware and Machinery trades.

Standard Lists.—"The Iron Age Standard Hardware Lists," 218 pages, price \$2, prepaid, contains the list prices of many leading goods.

Additions and Corrections.—The trade are requested to suggest any improvements with a view to rendering these quotations as correct and as useful as possible to Retail Hardware Merchants.

Adjusters, Blind—

North's Patent.....10%
Upson's Patent.....25%
Zimmerman's—See Fasteners, Blind.

Window Stop—

Ives' Patent.....25%
Ives' Stop Bead Screws and Washers.....25%
Taplin's Perfection.....25%

Anti-Rattlers—

Fernald Mfg. Co. Burton Anti-Rattlers, 1/2 doz. pairs, Nos. 1, \$0.75; 2, \$0.60; 3, \$0.65; 4, \$1.00; 5, \$0.50.
Quick Shifter, 1/2 doz. pairs, \$2.00@3.00
Spitzli Quick Shifter, 1/2 doz. pairs, \$1.60@1.75

Anvils—American—

Eagle Anvils.....1/2 doz. @ 9¢
Hay-Budden, Wrought.....1/2 doz. @ 9¢
Trenton.....1/2 doz. @ 9¢

Imported—

Swedish Solid Steel Paragon, 1/2 doz. @ 10¢
Peter Wright & Sons, 1/2 doz. @ 10¢
10¢; 350 to 600 lb., 11¢.

Anvil, Vice and Drill—

Millers Falls Co., \$18.00.....15¢10%

Augers and Bits—

Com. Double Spur.....80%
Jennings' Patn., Bright.....65¢10¢70%
Black Lip or Blued.....65¢65¢5%
Boring Mach. Augers.....70%
Car Bits, 12-in. twist.....40¢10%
Ford's Auger and Car Bits.....40¢5%
Ft. Washington Auger Co.....35%
Forstner Pat. Auger Bits.....25%
C. E. Jennings & Co.:
No. 10 ext. lip, R. Jennings' list, 25¢7 1/2%
No. 30, R. Jennings' list.....50%
Russell Jennings'.....25¢10¢2 1/2%
Mayhew's Countersink Bits.....45%
Pugh's Black.....25%
Pugh's Jennings' Pattern.....35%
Snell's Auger Bits.....60¢10%
Snell's Bell Hangers' Bits.....60%
Snell's Car Bits, 12-in. twist.....60%
Snell's King Auger Bits.....50%
Snell's Star Auger Bits.....50¢10%
Swan's Auger Bits.....65¢10¢70%
Swan's Jennings' Pattern.....50%

Bit Stock Drills—

See Drills, Twist.

Expansive Bits—

Ford's, Clark's Pattern.....66%
C. E. Jennings & Co. Steer's Pat. 25%
Lavigne Pat., small size, \$18.00; large size, \$26.00.....60¢10%
Swan's.....60%

Gimlet Bits—

Common Dbl. Cut.....\$3.00@3.25
German Pattern, Nos. 1 to 10, \$1.75; 11 to 13, \$5.25

Hollow Augers—

Ronney Pat., per doz., \$5.50@6.00
Ames.....20¢10%
Universal.....20%

Ship Augers and Bits—

Ship Augers.....10¢10¢50%
Ford's.....33 1/4¢5%
C. E. Jennings & Co.:
I. Hommedieu's.....6%
Watrous'.....33 1/4¢7 1/2%
Snell's.....50%

Awls—

Elmore Tool Mfg. Co.:
Timers' and Brad Awls.....55¢1%
Scratch Awls.....60%

Axes—

Single Bit, base weights: Per doz.
First Quality.....\$1.75@5.00
Second Quality.....\$1.25@4.50
Double Bit, base weights:
First Quality.....\$7.00@7.50
Second Quality.....\$6.50@6.75

Axles—

Iron or Steel.

Concord, Loose Collar.....4 1/4¢4 1/2¢
Concord, Solid Collar.....4 1/2¢5¢
No. 1 Common, Loose.....3 1/2¢4¢
No. 1 1/2 Com., New Style.....4 1/4¢4 1/2¢
No. 2 Solid Collar.....4 1/4¢4 1/2¢
Half Patent:
Nos. 7, 8, 11 and 12.....70%
Nos. 13 to 14.....70%
Nos. 15 to 18.....70¢10¢70¢10¢5%
Nos. 19 to 22.....70¢10¢70¢10¢5%

Boxes, Axles—

Common and Concord, not turned.....lb., 5¢9¢
Common and Concord, turned, lb., 6¢7¢
Half Patent.....lb., 9 1/2¢10¢

Bait—

Fishing—

Hendryx:
A Bait.....25%
B Bait.....25%
Competitor Bait.....20¢5%

Balances—

Sash—

Caldwell new list.....50¢10%
Pultman.....50¢10%

Spring—

Light Spring Balances.....50¢10¢60%
Chatillon's:
Light Spg. Balances.....50¢10¢60%
Straight Balances.....40¢10¢50%
Circular Balances.....50¢10¢60%
Large Dial.....30¢30¢10%

Barb Wire—See Wire, Barb.

Bars—

Crow—

Steel Crowbars, 10 to 40 lb., per lb., 2 1/2¢4 1/2¢

Prying and Pinch—

Elmore Tool Mfg. Co.....75%

Towel—

No. 10 Ideal, Nickel Plate, 1/2 gro. \$8.50

Beams, Scale—

Scale Beams.....40¢40¢10%
Chatillon's No. 1.....30%
Chatillon's No. 2.....40%

Beaters, Carpet—

Holt-Lyon Co.:
No. 12 Wire Coppered 1/2 doz. \$8.80;
Tinned.....\$8.50
No. 11 Wire Coppered 1/2 doz. \$1.15;
Tinned.....\$1.25
No. 10 Wire Tinned.....1/2 doz. \$1.50

Beaters Egg—

Dover Stamping & Mfg. Co.:
Genuine Dover, per gro., No. 1, Tumbler Size, \$7.50; No. 2, Family Size, \$24.00; No. 4, Hotel Size, \$39.00.
Holt-Lyon Co.:
Holt, per doz., No. 5, Jap'd \$8.80;
No. A, Jap'd \$1.15; No. B, Jap'd, \$1.85; No. 6, Jap'd \$1.65;
Lyon, Jap'd, per doz., No. 2, \$1.35.
Taplin Mfg. Co.:
Improved Dover, per gro., No. 60, \$6.00; No. 75, \$6.50; No. 100, \$7.00;
No. 102, Tin'd, \$8.50; No. 150, Hotel, \$15.00; No. 132, Hotel Tin'd, \$17.00; No. 200, Tumbler, \$8.50; No. 202, Tumbler Tin'd, \$9.50; No. 300, Mammoth, per doz., \$25.00.

Bellows—

Blacksmith, Standard List:
Split Leather.....60¢60¢10%
Grain Leather.....50¢50¢10%

Hand—

Inch. 6 7 8 9 10
Doz. \$4.50 5.50 6.00 7.00 7.50
Molders—
Inch. 10 12 14 16
Doz. \$8.50 11.00 13.50 15.50

Bells— Cow—

Wrought Cow Bells.....75%
Jersey.....75¢10%
Texas Star.....50%

Door—

Reading Hardware Co.....50%
Home, R. & E. Mfg. Co.'s.....55¢40%

Hand—

Polished, Brass.....60¢10¢10%
White Metal.....60¢10¢10%
Nickel Plated.....50¢10%
Swiss.....50¢10%

Miscellaneous—

Farm Bells.....lb., 2 1/4¢3¢
Church and School.....60¢60¢5%

Belting— Leather—

Extra Hvy. Single and Dble.....55%
Heavy, Single and Double.....60%
Medium, Single and Double, 60¢10%
Light, Single and Double, 60¢10¢10%
Shoulder, Single and Double, 75%
Standard.....70¢10%
Cut Leather Lacing.....50%
Leather Lacing Sides, per sq. ft., 23¢

Rubber—

Competition (Low Grade), 70¢10¢75%
Standard.....60¢10¢70%
Best Grades.....50¢50¢10%

Benders and Upsetters, Tire—

Green River Tire Benders and Upsetters.....20%

Bicycle Goods—

John S. Leng's Son & Co.'s 1909 list:
Chain, Parts, Spokes.....50%
Tubes.....60%

Blocks

Tackle—

Common Wooden.....75¢75¢10%
Lane's Patent Automatic Lock and Junior.....30%
See also Machines, Hoisting.

Boards, Stove—

Paper and Wood Lined.....50¢10¢10%
Embossed.....50¢10¢60%

Bobs, Plumb—

Keuffel & Esser Co.....33 1/4¢10%

Bolts

Carriage, Machine, &c.—

Common Carriage (cut thread):
1/2 x 6 and smaller.....70¢7 1/2%
Larger and longer.....65¢7%
Common Carriage (rolled thread):
3/8 x 6, smaller and shorter, 70¢12 1/2%
1/2 x 6 and smaller.....70¢12 1/2%
Larger and longer.....65¢10%
Phila. Eagle, \$3.00 list, 80¢
Bolt Ends, with C. & T. Nuts, 65¢5%

Machine (Cut Thread):

1/2 x 4 and smaller.....70¢12 1/2%
Larger and longer.....65¢10%

Door and Shutter—

Wrought Iron:
Wrought Barrel Japanned, 80¢10¢10¢85%
Barrel Bronzed.....60¢10¢70%
Spring.....70¢10¢10¢80%
Square Neck.....75¢10¢80%
Square.....80¢10¢80%
Ives' Mortise Door.....25%
Ives' Wrought Door.....25%

Expansion—

F. H. Evans' Crescent.....40¢60%
Richards Mfg. Co.....55¢10%
Star Expansion Bolt Co.:
Star, Lag Screw Type, 60¢10¢5¢2 1/2%
Star, Wood Screw Type.....40%

Star, Machine, Single Wedge.....60%
Star, Machine, Double Wedge, 60¢10%
Star Toggle Bolts.....60%
Steward & Roman Mfg. Co.:
Style No. 13, Double.....60¢10%
Style No. 1, Single.....60¢10%
Style No. 100, Dbl. Jaw, Single.....55%
Lag Screw.....65%
Star Screw Anchors, Hollow.....40%

Plow and Stove—

Plow.....65¢50¢70%
Stove.....85¢5¢85¢10%

Tire—

Common Iron.....80%
Norway Iron.....80%
American Screw Co.:
Norway Phila., list Oct. 16, '84, 30%
Eagle Phila., list Oct. 16, '84, 32 1/2%
Bay State, list Dec. 23, '99, 30%
Franklin Moore Co.:
Norway Phila., list Oct. 16, '84, 30%
Eagle Phila., list Oct. 16, '84, 32 1/2%
Eclipse, list Dec. 23, '99, 30%
Russell, Burdall & Ward Bolt & Nut Co.:
Empire, list Dec. 23, '99, 30%
Norway Phila., list Oct. 16, '84, 30%
Eagle.....32 1/2%
Shelton Co.:
Tiger Brand, list Dec. 23, '99, 30%
Phila., Eagle, list Oct. 16, 1881, 32 1/2%
Upson Nut Co.:
Tire Bolts.....80%

Borers, Bung—

Enterprise Mfg. Co., No. 1, \$1.25; No. 2, \$1.75; No. 3, \$2.50 each.....25%

Boxes, Bitch—

C. E. Jennings & Co.....25%
Langdon, New Langdon and Langdon Improved, 20¢10%; Langdon Acme.....15¢10%

Braces—

Common Ball.....\$1.50@1.75
Barber's.....50¢10¢10¢60%
Fray's Genuine Spafford's.....60%
Fray's No. 61, 166, 206, 614.....50%
C. E. Jennings & Co.....50%
Mayhew's Ratchet.....40%
Mayhew's Quick Action Hay Patent.....40¢10%
Millers Falls Drill Braces.....25¢10%
P. S. & W. Co., Peck's Pat. Revised List.....60¢60¢5%

Brackets—

Wrought Steel.....80¢10¢5%
Griffin's Pressed Steel.....75¢75¢10%
Griffin's Folding Brackets.....70¢10%
Stanley's Pressed Steel.....75¢10¢5%
Stanley's Folding Brackets.....70¢10¢5%
Taplin Victor Handy Egg Beater Bracket.....1/2 doz. \$1.50

Broilers—

Kilbourne Mfg. Co.....75¢20%
Wire Goods Co.....75¢10%

Butts—

Brass—

Wrought.....65%
Cast Brass, Tiebout's.....40¢10%

Wrought Steel—

BRIGHT.
Light Narrow, Light Reversible.....75¢5%
Reversible and Broad, 75¢10%
Loose Joint, Narrow, Light Inside Blind, etc.....75%
Back Flaps, Table Chest, 70%
BRONZED.
Light Narrow, Loose Pin, 55%
Light, Loose Pin, Bull Tip, 65%
Broad.....55%

Cages, Bird—

Hendryx Brass: Series 3000, 5000, 1100, net list: 1200, 15%; 200, 300, 900.....30%
Hendryx Bronze: Series 700, 800.....30%
Hendryx Enameled.....35%

Calks, Toe and Heel—

Blunt, 1 prong, per 100 lb., \$3.50 @ \$3.85
 Sharp, 1 prong, per 100 lb., \$4.00 @ \$4.35
 Buckle's, 1 pr. Blunt Toe, 3 1/2 c; 2 pr. Blunt Toe, 4 1/2 c; 1 pr. Sharp Toe, 4 1/2 c; 2 pr. Sharp Heel, 4 1/2 c; Blunt Heel, 4 1/2 c; Sharp Heel, 4 1/2 c
 Perkins', Blunt, 3/4 lb, 3.65 c; Sharp, 4.15 c

Caps— Primers—

Bedford Primers, \$2 per M. 20 c; 5 pr. Shell and Bullets, 15 c; 10 c; All other primers per M. \$1.50 @ 1.60

Cartridges—

Blank Cartridges:
 22 C. F., \$5.50 10 c; 5 c
 22 C. F., \$7.00 10 c; 5 c
 22 cal. Rim, \$1.50 10 c; 5 c
 22 cal. Rim, \$2.75 10 c; 5 c
 B. B. Caps, Con. Ball, Suedg. \$1.00
 B. B. Caps, Round Ball, \$1.19
 Central Fire, \$2.50 25 c
 Target and Sporting Rifle, 15 c; 5 c
 Primed Shells and Bullets, 15 c; 10 c
 Rim Fire, Sporting, \$5.00 50 c
 Rim Fire, Military, \$5.00 50 c

Castors—

Bed 65 c; 10 c; 70 c
 Plate 60 c; 10 c; 10 c
 Philadelphia 70 c; 10 c; 75 c
 Gem (Roller Bearing) 70 c; 10 c; 10 c
 Steel Gem (Roller Bearing) 70 c
 Standard Ball Bearing 45 c
 Yale (Double Wheel) low list, 40 c; 10 c

Chain, Proof Coil—

American Coil, Straight Link:
 3/16 3/4 5-16 3/8 1/2 5/8
 5/16 5/8 1-1/8 3/4 1-1/4 1-1/2
 1-1/8 1-1/4 1-1/2 1-3/4 1-7/8 2
 German Coil, \$70 c; 5 c
 German Pattern Coil:
 6-10 to 1 70 c; 10 c; 5 c
 2 and 3 60 c; 10 c; 10 c
 4, 5 and 6 50 c; 10 c; 10 c

Halter—

Halter Chains 60 c; 5 c; 60 c; 10 c
 German Pattern Halter Chains, list July 24, '97 70 c; 5 c
 Covert Mfg. Co.:
 Halter 30 c; 10 c; 10 c

Trace, Wagon, &c.—

Traces, Western Standard: 100 pr.
 6 1/2-6 3/4, Straight, with ring, \$26.00
 6 1/2-6 3/4, Straight, with ring, \$27.00
 6 1/2-8 2, Straight, with ring, \$30.00
 6 1/2-10 2, Straight, with ring, \$35.00
 NOTE.—Add 2c per pair for Hooks
 Twist Traces; add per pair for Nos. 2 and 3, 2c; No. 1, 3c; No. 4, 4c to price of Straight Link.
 Eastern Standard Traces, Wag-
 on Chain, &c. 70 c; 10 c; 10 c

Miscellaneous—

Jack Chain:
 Iron 60 c; 10 c; 10 c
 Brass 60 c; 10 c; 10 c
 Safety and Plumbers' Chain, 75 c
 Gal. Pump Chain, 1 lb., 4 1/2 c
 Bridgeport Chain Co.:
 Triumph Halter and Coil, 35 c; 2 1/2 c; 40 c
 Triumph Dog, 50 c; 10 c; 60 c
 Brown Halter and Coil, 45 c; 50 c; 5 c
 Covert Mfg. Co.:
 Breast, Halter, Heel, Rein, Stal-
 lion, Post, 30 c; 10 c; 10 c
 Oneida Community:
 American Halter, Dog and Kennel
 Chains, 35 c; 2 1/2 c; 40 c
 Niagara Dog Leads and Kennel
 Chains, 45 c; 50 c; 5 c
 Wire Goods Co.:
 Dog Chain, 70 c
 Universal Dbl.-Jointed Chain, 50 c; 10 c

Chain and Ribbon, Sash—

Oneida Community:
 Steel Chain, 60 c
 Pullman:
 Bronze Chain, 60 c; Steel Chain, 60 c
 Coppered 60 c; 10 c
 Sash Chain Attachments, per set, 8 c
 Aluminum Sash Ribbon, per 100
 ft. \$2.00 @ \$5.00
 Sash Ribbon Attachments, per set, 8 c

Chalk—

Carpenters' Blue, gro., 50 c; 55 c
 Carpenters' Red, gro., 50 c; 55 c
 Carpenters' White, gro., 40 c; 55 c

Checks, Door—

Bardale's 33 c; 4 c
 Reading, O'Brien, 30 c; 5 c
 Pullman, per gro., \$54.00
 Russwin 35 c; 4 c

Chests, Tool—

American Tool Chest Co.:
 Boys' Chests, with Tools, 35 c
 Youths' Chests, with Tools, 40 c
 Gentlemen's Chests, with Tools, 50 c
 Farmers' Carpenters, etc., Chests,
 with Tools 20 c
 Machinists' and Pipe Fitters' 45 c
 Chests Empty, 45 c
 Tool Cabinets, 45 c
 E. Jennings & Co.'s Machinists' 75 c
 Tool Chests, 75 c

Chisels—

Socket Framing and Firmer

Standard List, 80 c; 10 c @—%
 Buck Bros. 30 c
 C. E. Jennings & Co.:
 Socket Framing No. 10, 25 c; 7 1/2 c
 Socket Framing No. 15, 25 c; 7 1/2 c
 R. & E. Mfg. Co., 70 c; 70 c; 10 c
 Swan's 60 c; 70 c; 10 c
 L. & I. J. White & Co., 30 c; 30 c; 5 c

Tanged—

Tanged Firmers, 35 c; 10 c @ 40 c
 Buck Bros. 30 c
 C. E. Jennings & Co. Nos. 101, 181, 25 c
 R. & E. Mfg. Co., 25 c; 30 c; 5 c
 L. & I. J. White Co., 25 c; 35 c

Box—

Elmore Tool Mfg. Co., 50 c

Cold— lb.

Cold Chisels, good quality, 15 c; 15 c
 Cold Chisels, fair quality, 11 c; 12 c
 Cold Chisels, ordinary, 9 c; 10 c
 Elmore Tool Mfg. Co.:
 Cold Chisels, 50 c; 5 c

Chucks—

Almond Drill Chucks, 35 c
 Almond Turret Six-Tool Chuck, 40 c
 Beach Pat, each \$8.00, 35 c; 5 c
 Cincinnati Chuck Co.:
 Independent 4-Jaw Reversible, 35 c
 Jacobs' Drill Chucks, 35 c
 Skinner Lathe Chucks:
 Independent 35 c
 Universal, Reversible Jaws, 35 c
 Universal, Com. Style Jaws, 40 c
 Combination, Com. Style Jaws, 40 c
 Round Body or Box Body, 2 Chuck
 Jaws 25 c
 Geared Scroll Chucks, 25 c
 Drill Chucks:
 New Model, 25 c; Geared Pat-
 tern, 25 c; Skinner Patent, 25 c
 Positive Drive, 40 c
 Planer Chucks, 20 c
 Standard 45 c
 Drill Press Vises, 30 c
 Face Plate Jaws, 35 c
 Standard Tool Co.:
 Improved Drill Chuck, 45 c
 Union Mfg. Co.:
 Combination, Nos. 1, 2, 3, 4, 5, 6,
 7, 8 and 17, 40 c; No. 21, 35 c
 Scroll Combinations, Nos. 83 and
 84 30 c
 Geared Scroll, Nos. 33, 34 and 35, 25 c
 Independent Iron, Nos. 18 and 318, 35 c
 Independent Steel, No. 64, 25 c
 Union Drill, Nos. 000, 00, 100, 101,
 102, 103, 104 35 c
 Union Gear Drill, 25 c
 Union Gear Drill Chuck, 25 c
 Universal, 11, 12, 16, 17, 13, 14, 15, 40 c
 Universal No. 42, 35 c
 Iron Face Plate Jaws, Nos. 28, 30,
 48 and 50 35 c
 Steel Face Plate Jaws, Nos. 70 and
 71 30 c
 Westcott Patent Chucks:
 Lathe Chucks, 50 c
 Little Giant Auxiliary Drill, 50 c
 Little Giant Double Grip Drill, 50 c
 Little Giant Drill, Improved, 60 c
 Oneida Drill, 50 c
 Scroll Combination Lathe, 50 c

Clamps—

Carriage Makers', Star, P., S. & W.
 Co., 50 c; 50 c; 5 c
 Best Parallel, 33 c; 10 c
 Hammer & Co.:
 Adjustable 20 c; 5 c
 Carriage Makers' H. P. Screw, 40 c; 5 c
 Myers', Standard and Wenzelmann
 Hay Rack, 50 c
 Saw Clamps, see Vises, Saw Filers'

Cleaners, Drain,

Iwan's Champion, Adjustable, 50 c
 Iwan's Champion, Stationary, 40 c; 5 c

Cleavers, Butchers'—

Foster Bros. 30 c
 L. & I. J. White Co., 30 c

Clippers, Horse and Sheep—

Chicago Flexible Shaft Co.:
 1902 Century Horse, each, \$10.75
 20th Century Horse, each, \$5.00
 Lightning Belt Horse, each, \$15.00
 Chicago Belt Horse, each, \$20.00
 Stewart's Enclosed Gear Ball
 Bearing Horse, each, \$7.50
 Stewart's New Model Sheep
 Shearing Machine, each, \$12.75
 Stewart Enclosed Gear Shear-
 ing Machine, No. 8, each, \$9.75

Clips, Axle—

Regular Styles, 80 c; 80 c; 10 c

Cocks, Brass—

Hardware List:
 Plain Bibbs, Globe, Kerosene,
 Racking, Liquor, Bottling,
 &c 75 c
 Compression Bibbs, 75 c

Compasses, Dividers, &c.

Ordinary Goods, 75 c; 75 c; 5 c

Conductor Pipe,—

All territories, L. C. L.
 Galvanized Steel, 50 c; 10 c; 5 c @—%
 Charcoal 50 c; 10 c; 5 c
 Copper 50 c; 10 c; 5 c
 Terms, 60 days; 2 c cash 10 days. Fac-
 tory shipments generally delivered.
 See also Eave Troughs.

Coolers, Water—

L. & G. Mfg. Co.:
 Galvanized Lined, side handles,
 Gal., 2 3 4 6 8
 Each, \$1.50 1.60 2.00 2.30 3.00
 White Enameled Lined, Side
 Handles:
 Gal., 2 3 4 6 8
 Each, \$2.40 2.80 3.50 4.30 5.60
 Agate Lined, Side Handles:
 Gal., 2 3 4 6 8
 Each, \$5.00 3.10 4.30 5.30 6.60

Coppers, Soldering—

Soldering Coppers, 3 lb. to pair
 and heavier, 21 c; lighter than
 3 lb. to pair, 23 c

Cord— Sash—

Braided, Drab, 1 lb. 35 c
 Braided, White, Com., Nos. 8
 to 12, 25 c; No. 7, 25 1/2 c; No.
 6, 26 1/2 c
 Cable Laid Italian, lb., No. 18, 37 c
 Italian, lb., A. No. 18, 25 c; B, 22 c
 Common India, lb., 11 c; 11 1/2 c
 Cotton Sash Cord, Twisted, 18 c; 20 c
 Patent Russia, lb., 20 c
 Cable Laid Russia, lb., 21 c
 India Hemp, Br'd'd., lb., 21 c
 India Hemp, Twisted, lb., 13 c; 11 c
 Patent India, Twisted, lb., 17 c
 Edlystone, Braided, Nos. 8 to 12,
 26 c; 7, 26 1/2 c; 6, 27 1/2 c
 Harmony Cable Laid Italian, Nos. 7
 to 10, 10 c; 11 lb 23 c
 Pullman:
 Wire Sash Cord, 10 c
 Sash Cord Attachments, per 100, \$2.00
 Samson, Nos. 8 to 12:
 Braided, 1 lb., Drab Cotton,
 55 c; Italian Hemp, 40 c; 4 c
 50 c; Linen, 65 c; White Cot-
 ton, 50 c; Spot Cord, 50 c
 Massachusetts, White, 1 lb 10 c
 Massachusetts, Drab, 1 lb 45 c
 Phoenix, White, Nos 8 to 12, 10 c
 Silver Lake, per lb.:
 A, Drab, 45 c; A, White, 40 c;
 B, Drab, 40 c; B, White, 35 c;
 Italian Hemp, 40 c; Linen, 57 c;
 See also Chain and Ribbon.

Wire, Picture—

Full Length, 90 c @—%
 Short Length, 90 c @ 20 c @—%
 Hendryx Standard Wire Picture Cord
 90 c; 10 c
 Turner & Stanton Co. Wire Picture
 Cord 90 c; 10 c

Cradles—

Grain 50 c

Crayons—

White Round Crayons, Cases, 100
 doz., \$8.00, \$8.50, \$9.00 and \$10.00
 according to grade.

Zehicker's Lumber: \$ gro.
 White and Purple, Indelible, \$5.50
 Blue, Red, Green, Yellow and
 Terra Cotta, \$6.50; Black, \$4.50
 Giant Lumber, 5 1/4 in x 15-16 in,
 round, all colors, \$12.00; Indeli-
 ble, \$14.00; Blacks, \$10.00
 Genuine Soapstone, Metal Workers',
 5 in. x 1 1/4 in. Round, \$2.50; 5 in. x
 1 1/4 in. Square, \$1.75; 5 x 1 1/2 x 3-16,
 \$2.50; 5 x 1 1/4 x 3-16, \$3.00
 Suremark, Black, \$2.25; Blue, Red
 and Yellow, \$2.50

Cutlery, Table—

International Silver Company:
 No. 12 M'd'm Knives, 1847, 3 doz, \$3.50
 Star, Eagle, Rogers & Hamilton
 and Anchor, 39 doz, \$3.50
 Wm. Rogers & Son, 39 doz, \$2.50

Cutters— Glass—

H. H. Mayhew Co., 40 c; 5 c

Meat and Food—

Enterprise:
 Nos. 5 10 12 22 32
 Each \$1.75 \$2.50 \$2.25 \$4 \$5 25 c; 25 c; 7 1/2 c
 No. 202, \$1.50 10 c; 7 1/2 c
 P. S. & W. Co.:
 Ideal 40 c; 10 c; 5 c
 Hales 60 c; 5 c
 Little Giant, 40 c; 50 c
 Nos. 305 310 312 320 322
 \$35.00 \$48.00 \$44.00 \$72.00 \$98.00
 New Triumph No. 605, 3 doz, \$24.00,
 Russwin Food, No. 1, \$24.00; No. 2,
 \$27.00; 3, \$12.00 45 c; 10 c; 10 c
 \$15.00 \$18.00

Siaw and Kraut—

Henry Diston & Sons:
 Siaw and Kraut Cutters, 35 c
 Corn Graters, 30 c
 J. M. Mast Mfg. Co.:
 Siaw Cutters, 1 Knife, 40 doz, \$3.00
 Combined Siaw Cutter and Corn
 Grater 40 doz, \$4.00

Tobacco—

Enterprise 25 c; 30 c

Diggers, Post Hole, &c—

Diston's:
 Rapid, 3 doz, \$24.00 25 c
 Samson, 3 doz, \$31.00 25 c
 Iwan's Pat. Post Hole and Well
 Auger 40 c
 Vaughan Pattern Post Hole Augers,
 4 to 9 in., 3 doz, \$6.25
 Perfection Post Hole Diggers, 3
 doz, \$8.25

Split Handle Post Hole Diggers, 3 doz, \$7.25
 Hercules Pattern, 3 doz, \$8.75
 Kohler's, 3 doz, Universal, \$14.00;
 Little Giant, \$12.00; Genuine Her-
 cules, \$10.00; Invincible, \$9.00;
 Rival, \$8.50; Pioneer, \$7.50
 Never-Break Crucible Steel Post
 Hole Diggers 60 c

Dressers Emery Wheel—

Sterling Emery Wheel Dressers, 35 c
 Sterling Wheel Dresser Cutters, 35 c

Drills and Drill Stocks—

Blacksmith's Common Drilling
 Machines \$1.50 @ 1.75
 Breast, Millers Falls, 15 c; 10 c
 Breast, P., S. & W., 30 c; 10 c
 C. & C. Ratchet, 25 c
 Reversible Ratchet Die Stocks, 25 c
 Forbes Die Stocks, 25 c
 Goodell Automatic Drills, 50 c; 10 c; 60 c; 10 c
 Millers Falls Automatic Drills,
 Graves', per doz., Nos. 1, \$4.86;
 2, \$8.16
 Millers Falls Automatic Drills, 33 c; 10 c
 Noyes Repair Shop Drill No. 10, 25 c
 Ratchet, Parker's, 40 c
 Ratchet, Weston's, Styles A and B, 50 c
 Ratchet, Weston's, Styles C, D and
 F 45 c
 Ratchet, Weston's, Style H Im-
 proved, 45 c
 Ratchet, No. 012, 50 c
 Ratchet, Celebrated, 50 c
 Ratchet, Whitney's, P., S. & W., 50 c
 Star Drills, 60 c
 Star Pipe Drills, 50 c; 10 c
 Secho Extension Drills, 40 c; 10 c; 5 c
 Star Drill Holders, 50 c; 10 c; 10 c
 Star Drill Points, 50 c; 10 c; 10 c

Twist Drills—

Bit Stock, 70 c; 70 c; 10 c
 Taper and Straight Shank, 65 c; 65 c; 10 c

Drivers, Screw—

Buck Bros' Screw Driver Bits, 30 c
 Diston's Screw Drivers, Handles
 and Ferrules, 70 c
 Elmore Tool Mfg. Co.:
 Elmore 60 c
 Hartford 60 c
 Indestructible 55 c; 10 c
 Standard Nevertum, 60 c
 Star 75 c; 5 c
 Screw Driver Bits 25 c
 Fray's Hol. H'dle Sets, No. 3, \$12.50
 Ford's Brace Screw Drivers, 40 c; 10 c
 Gay's Double Action Ratchet, 35 c
 Goodell's Auto, 65 c; 65 c; 10 c
 Mayhew's Black Handle, 45 c
 Mayhew's Monarch, 45 c
 Millers Falls, 3 doz., Nos. 11, \$9.95;
 12, \$13.75; 20, \$8.17; 21, \$8.16; 41,
 \$13.45; 42, \$17.21
 Swan's:
 Nos. 7545 to 7588, 60 c; No. 7540,
 40 c; 10 c

Eave Trough, Galvanized—

All territories.
 Galvanized Steel, 80 c; 10 c; 10 c @—%
 Copper 50 c; 10 c; 10 c
 Terms.—2% for cash. Factory shipments
 generally delivered.
 See also Conductor Pipe and Elbows.

Elbows and Shoes—

Factory shipments, all territories:
 Galv. Steel, Galv. C. I. and
 Copper
 Sizes 2, 3, 4 80 c
 Sizes 1 1/2, 2 1/2, 3 1/2, 5, 6 60 c; 10 c
 No. 26 50 c
 No. 21 85 c
 Copper Elbows, 50 c

Emery, Turkish—

4 to 5 1/2 to
 46: 220: Flour.
 Kegs 10 c; 5 c; 5 1/2 c; 3 1/2 c
 1/2 Kegs 10 c; 5 1/2 c; 5 c; 3 1/2 c
 1/4 Kegs 10 c; 5 1/2 c; 5 c; 3 1/2 c
 10-lb. cans,
 10 in case, 5 1/2 c; 7 c; 6 c; 4 c
 10-lb. cans, less
 than 10 10 c; 10 c; 10 c; 8 c
 Less quantity, 10 c; 10 c; 8 c
 NOTE.—In lots 1 to 3 tons a discount of
 10% is given.

Extensions, Bit—

Ford's Auger Bit Extensions, 40 c; 5 c

Extinguishers—Fire

Royal Mfg. Co. Fire, 3 doz.,
 \$12.00 50 c

Fasteners, Blind—

Upson's Patent, 25 c
 Walling's, 50 c
 Zimmermann's Jap'd and Galv., 65 c;
 Bronze and Plated, 50 c

Cord and Weight—

Ives, 3 doz, \$1.06 25 c
 Titan, 3 doz, \$0.66 25 c

Corrugated—

Acme Corrugated Fasteners.....70%

Faucets—Cork Lined.....50&10&60%
Metallic Key, Leather Lined, ..
60&10&70%
Red Cedar.....40&50&10&65%
Petroleum.....70&10&75%

John Sommer Faucet Co.:

Peerless Tin Key.....40%
Boss Tin Key.....50%
Victor Metal Key.....50&10
Duplex Metal Key.....60%
Diamond Lock.....4%
I.X.L. Cork Lined.....50%
Reliable Cork Lined.....50&10
Chicago Cork Lined.....60%
O. K. Cork Lined.....50%
No Brand, Cedar.....60%
Perfection, Cedar.....30%Self Measuring:
Enterprise, Self Measuring and
Pump, 3/4 doz., \$36.00.....40&10%
Lane's, 3/4 doz., \$36.00.....40&10%**Files— Domestic—**Best Brands.....70&10&75&10%
Standard Brands.....75&10&80%
Lower Grade.....75&10&10&80&10%
Disston's Superfine.....60%
Fitchburg.....70&10&75&10%
Heller Bros.....70&10&75&10%
Liveright Bros., Gold Medal.....70%
McCaffrey's American Standard,
60&10&10%
McCaffrey's Swiss Pattern.....45&10%
Simonds.....70%**Fixtures, Fire Door—**

Richards Mfg. Co.:

Universal, No. 103; Special, No.
104.....\$3.75
Fusible Links, No. 96.....50%
Expansion Bolts, No. 107.....60&10%**Grindstone—**Net Prices:
Inch.....15 17 19 21
Per doz.....\$3.00 3.25 3.55 4.00
Peck, Stow & Wilcox Co.:
In.....15 17 19 21 24
\$4.00 4.40 4.75 5.50 6.30.....20%
Reading Hardware Co.....50&10%**Frames— Wood Saw—**White, 8'x1 Bar, per doz.80&100%
Red, 8'x1 Bar, per doz.1.00&1.25
Red, Dbl. Brace, per doz.1.40&1.50**Freezers, Ice Cream—**Qt.....1 2 3 4 5 6
Each.....\$1.25 \$1.60 \$1.90 \$2.20 \$2.50 \$2.80**Fuse— Per 1000 Feet.**Hemp.....\$2.75
Cotton.....3.20
Waterproof Spl. Taped.....3.65
Waterproof Dbl. Taped.....4.40
Waterproof Tpl. Taped.....5.15**Gates, Molasses and Oil—**

Stebbins' Pattern.....30&60&15%

Gauges—Marking, Mortise, &c.....50&50&10%
Chapin-Stephens Co.:
Marking, Mortise, &c.....50&50&10%
Disston's Marking, Mortise, &c.....50&50&10%
Wire, Brown & Sharpe's.....35%
Wire, Morse's.....25%
Wire, P., S. & W. Co.....25%**Gimlets— Single Cut—**Numbered assort-
ments, per gro.
Nail, Metal, No. 1, \$2.00; 2, \$2.30
Spike, Metal, No. 1, \$4.00; 2, \$4.30
Nail, Wood Handled, No. 1,
\$2.30; 2, \$2.60
Spike, Wood Handled, No. 1,
\$4.30; 2, \$4.60**Glasses, Level—**Chapin-Stephens Co.....65&65&10%
Disston & Sons.....60&10%**Glue, Liquid Fish—**Bottles or Cans, with Brush,
25&10&50%**Grease, Axle—**Common Grade.....gro. \$6.00&10&65.50
Dixon's Everlasting, 10-lb. pails, ea.
85¢; in boxes, 3/4 doz., 1 lb., \$1.20;
2 lb., \$2.00
Helmet Hard Oil.....25%**Griddles, Soapstone—**

Pike Mfg. Co.....33%&33%&10%

Grinders—Pike Mfg. Co.:
Hand and Foot Power, Pyko Nos.
1, 2, 3; Pyko Primo; Pyko Peer-
less; Pyko Spiral (foot power) 33%
Mower Knife and Tool, \$5.00, 40&10%

Royal Mfg. Co.:

Hand Power, each, Nos. 01, \$1.75;
02, \$2.25; 1A, \$2.50; 1B, \$3.25;
Foot Power, No. 10, \$5.00.....33%
Encased Gears, No. 15 Hand
Power, \$12.50; Combined Hand
and Foot Power, \$15.00.....33%
Lawn Mower Grinder, No. 40,
\$5.75
Sieve Grinder, each, No. 20,
\$5.00.....33%
Cast or Cut Gears,**Grindstones—**

Pike Mfg. Co.:

Improved Family Grindstones, 3/4
inch, 3/4 doz., \$2.00.....33%
Richards Mfg. Co., Eli and Cycle,
Ball Bearing, mounted.....40%**Grips, Nipple—**

Perfect Nipple Grips.....40&10&2%

Halters and Ties—

Cow Ties.....70&10@—%

Bridgeport Chain Co.:

Triumph Coil and Halters, 35&2%
Brown Coil and Halters.....40%
Brown Cow Ties.....50&50&5%
Brown Tie Outs.....70&10&75&5%

Covert Mfg. Co.:

Web.....30&10%
Jute Rope.....55%
Sisal Rope.....45%
Cotton Rope.....55%
Hemp Rope.....45%

Oneida Community:

Am. Coil and Halters.....40&40&5%
Am. Cow Ties.....35&2%
Niagara Coil and Halters.....45%
Niagara Cow Ties.....50%**Hammers—****Handled Hammers—**Heller's Machinists'.....65&10&65&10%
Heller's Farriers'.....40&10&10%
Peck, Stow & Wilcox Co.:
Crucible Steel.....50%
Farriers'.....50%
Riveting.....50%
Machinists'.....50%
Blacksmiths'.....50%
Elmore Shoemakers' Hammers.....75%
Victor Magnetic Tack, 3/4 gro.....\$7.75**Heavy Hammers and Sledges—**Under 3 lb., per lb., 50¢.....80&10%
3 to 5 lb., per lb., 40¢.....80&10&10%
Over 5 lb., per lb., 30¢.....80&10&10%**Handles—****Agricultural Tool Handles**Arc, Pick, &c.....60&10&60&10%
Hoe, Rake, &c.....30&5&30&10%
Fork, Shovel, Spade, &c.:
Long Handles.....30&5&30&10%
D Handles.....30&5&30&10%**Cross-Cut Saw Handles—**Atkins'.....35%
Disston's Handles and Saw Tabs.....45%**Mechanics' Tool Handles—**Auger, assorted.....gro. \$3.00&10&3.50
Brad Axl.....gro. \$1.65&10&1.75
Chisel Handles, Ass'd, per gro.:
Tanged Firmer, Apple, \$2.40&
\$2.65; Hickory.....\$2.15&10&2.40
Socket Firming, Apple, \$1.75&
\$1.95; Hickory.....1.60&10&1.75
Socket Framing, Hickory,
\$1.60&10&1.75
File, assorted.....gro. \$1.25&10&1.50
Hammer, Hatchet, &c.,
60&10&60&10&5%
Hand Saw, Varnished, doz., 80¢;
Not Varnished.....70&10&75%
Plane Handles:
Jack, doz., 25¢; Fore, doz., 40¢
Chapin-Stephens Co.:
Carving Tool.....30&30&10%
Chisel.....60&60&10%
File and Awl.....60&60&10%
Saw and Plane.....30&30&10%
Screw Driver.....30&30&10%
Millers Falls Adj. and Ratchet Auger
Handles.....15&10%
Nicholson Simplicity File Handle.....
3/4 gro. \$0.85&10&1.50

J. L. Osgood:

Indestructible File and Tool,
gro., No. 1, \$8.00; No. 2, \$9.50;
No. 3, \$9.00; No. 4, \$9.50; No.
5, \$10.00.....gro. lots 10%

W. A. Zelnicker Supply Co.:

Hammer, 3/4 doz., 12 in., \$2.00;
14 in., \$2.00; 16 in., \$2.30; 18
in., \$2.50; 20 in., \$2.70; 22 in.,
\$3.00; 24 in., \$3.30; 26 in., \$3.50;
30 in., \$3.80,
Sledge, 3/4 doz., oval, 30 in.,
\$3.80; octagon, 30 in., \$3.80;
oval, 36 in., \$4.00; octagon,
36 in., \$4.00,
Axe, 3/4 doz., 28 to 34 in., \$5.60;
36 in., \$5.80,
Adze, 3/4 doz., 36 in., \$5.80; 36
in., \$7.80,
Pick, 3/4 doz., R. R., 36 in.,
\$8.00; coal, 34 in., \$5.80,
Hatchet, 3/4 doz., 12 to 14 in.,
\$2.00,**Hangers—**NOTE.—Barn Door Hangers are gen-
erally quoted per pair, without track
and Parlor Door Hangers per double set
with track, &c.

Chicago Spring Butt Co.:

Friction.....25%
Oscillating.....25%
Big Twin.....25%
Chisholm & Moore Mfg. Co.:
Baggage Car Door.....50%
Elevator.....30%
Railroad.....50%
Cronk & Carrier Mfg. Co.:
Loose Axle.....60&10%
Roller Bearing.....70%
Hinged Mfg. Co.:
Solid Axle, No. 10, \$12.00, 60&10%
Roller Bearing, No. 11, \$15.00,
60&10%
Roller Bearing, Ex. Hy., No.
22, \$18.00.....60&10%
Bull Dog, \$24.00.....70%
Lane Bros. Co.:Parlor, Ball Bearing, \$1.00;
Standard, \$3.15; No. 105, \$2.85;
New Model, \$2.80; New Cham-
pion per set of 4 Hangers, com-
plete with track.....\$2.25
Barn Door, Standard.....60&10%
Covered.....60&5%
Special.....70&5%
Trolley Hangers and track.....50%
Lawrence Bros.:Cleveland.....70&7%
Clipper, No. 75.....55&10%
Cyclone, No. 40.....net \$6.50
Tandem, No. 50.....net \$7.50
New York.....55&10%
Trolley, No. 30, 3/4 pair.....\$1.25
McKinney Mfg. Co.:Roller Bearing, Nos. 1 and 2, 70%
Anti-Friction.....60%
Hinged Hangers, King Charn.....60%
F. E. Myers & Bro., Stayon;
O K; O K Adjustable; Sure
Grip; Sure Grip Adjustable; Sure
Grip Tandem; Sure Grip
Tandem Adjustable; Tandem
Adjustable.....60%
Richards Mfg. Co.:Hangers, Nos. 47, 48, 147, 247,
60&5%
Pioneer Wood Track, No. 3, \$2.25
Roller B'g St'l Track No. 12, \$2.20
Roller B'g St'l Track No. 13, \$2.50
Roller B'g, Nos. 39, 41, 70&7%
Hero, Adj. Track No. 19, 50&10%
Adjustable Track Tandem Tol-
ley Track No. 16.....50&10%
Seal, Steel Track No. 8.....\$2.25
Auto Adj. Track No. 22, 50&5%
Trolley B. D. No. 17, \$1.25; P.
D. No. 18, \$2.25; No. 121,
\$2.45; No. 150.....\$2.50
Safety Underwriters F. D. No.
101.....50%
Tandem No. 44, 2 1/2 and 3 60&10%
Palace, Adjustable Track No.
1.....50&5%
Royal, Adjustable Track No.
122.....50&10%
Ives' Wood Track No. 1.....\$2.25
Trolley B. D. No. 20.....50&10%
Trolley B. D. No. 21, \$1.30; No.
22, \$1.40; No. 28.....\$1.60
Roller Bearings, Nos. 37, 38, 39,
41, 43, 44, Sizes 1 and 2, 70&7%
Anti-friction, No. 42; No. 44,
sizes 2 1/2 and 3.....60%
Hinged Tandem No. 48.....60&5%
Folding Door B. B. Swivel No.
135.....40%**Hangers— Garment—**Pullman Trouser, 3/4 gro., No. 1
\$2.00; No. 4, \$2.00; No. 5, \$16.50;
No. 6, Black Enamel, \$7.50; No. 10,
\$21.00; No. 12, \$3.00; No. 15, Rods,
\$9.00; No. 18, Loops.....\$10.00
Victor Folding.....3/4 gro. \$9.60**Joist and Timber—**

Lane Bros. Co.....35%

Hasps—Griffin's Security Hasp.....50&10%
McKinney's Perfect Hasp, 3/4 doz.....60%**Hatchets—**Regular list, first qual. 50¢ 10¢ 60¢
Second quality.....60¢ 60¢ 10%**Heaters, Carriage—**Clark, No. 5, \$1.25; No. 5B, \$1.50; No.
3, \$1.75; No. 3D, \$2.00; No. 1,
\$3.00
Big Hit Assortment, 3/4 case.....\$13.80
Leader, 3/4 case.....\$9.00
Clark Coal, doz.....\$0.75
A B C Coal, doz.....\$0.60
Sadiron Coal, box 50 pieces.....\$0.75**Hinges—****Blind and Shutter Hinges**Surface Gravity Locking Blind:
Doz. Sets with Fastenings, No.
1, \$0.75; No. 3, \$1.40; No. 5,
\$2.85.
North's Automatic Blind Fixtures,
No. 2, for Wood, \$9.00; No. 3, for
Brick, \$11.50.....10%
Charles Parker Co.....70&75%
Parker Wire Goods Company
Hale & Benjamin Automatic Blind
Hinges.....20%
Hale's Blind Awning Hinges, No.
110, for wood, \$9.00; No. 111, for
brick, \$9.00.....20%Reading's Gravity.....50&10%
Stanley's Steel Gravity Blind Hinges,
No. 1671, 3/4 doz. sets, without
screws, \$1.00; with screws, \$1.50.

Wrightville Hardware Co.:

O. S., Lull & Porter.....75&5%
Acme, Lull & Porter.....75%
Queen City Reversible.....75%
Shepard's Noiseless, Nos. 60, 61,
55.....75%
Niagara, Gravity Locking, Nos.
3 & 5, P., No. 1.....75&10%
Clark's O. P., No. 1.....75&10%
Clark's O. P., Nos. 3 and 5.....75&10%
Tip Pat's, No. 1.....75&10%
Clark's No. 3.....75&10%
Buffalo Gravity Locking, Nos.
3 & 5.....79&10&10%
Shepard's Double Locking.....75&10%
Champion Gravity Locking.....75&10%
Pioneer Gravity Locking.....75&10%
Empire.....75&10%
W. H. Co.'s Mortise Gravity Lock-
ing, No. 2.....60&10%**Gate Hinges—**

Western:

With Latch.....doz. \$1.75
Without Latch.....doz. \$1.15Wrightville Hardware Co.:
Shepard's or Clark's Hinges and
Latches, Hinges only or Latches
only, Nos. 1, 2 or 3.....70%**Miscellaneous—**Griffin Mfg. Co., Fleur de Lis Sur-
face Hinges, 3/4 doz. prs.....\$1.00**Pivot Hinges—**Bommer Bros., Pivot, Ball Bear-
ing.....40%
Lawson Mfg. Co., Matchless.....50&10%**Spring Hinges—**Holdback, Cast Iron.....\$5.25&10&5.75
Non-Holdback, Cast Iron.....\$6.50&10&6.75J. Bardsley:
Simplex Spring Hinges.....40%
Bardsley's Patent Checking.....50%
Bommer Bros.:Spring Butt Hinges.....40%
Surface Floor, Ball Bear-
ing.....40%
Mortise Floor, Ball Bearing.....40%
Lavatory Hinges.....40%
Non-Holdback Screen Door,
Nos. 2000 and 900.....40%
Holdback Screen Door, No.
999.....\$2.00, \$2.00Chicago Spring Butt Co.:
Chicago Spring Hinges.....25%
Triple Spring Hinges.....50%
Chicago (Ball Bearing) Floor.....50%
Chicago Engine House.....25%
Lavatory Door Hinges.....50%
Adjustable Screen Door.....60%
Non-Holdback.....65%
Lawson Mfg. Co.:Matchless Spring Hinges.....
30&10&10%
Matchless Jamb Hinges.....
30&10&10%
Lavatory.....50&10%
Surface Floor.....60&10%Richards Mfg. Co.:
Superior Double Acting Floor
Hinges.....40%
Shelby Spring Hinge Co.:
Buckeye All Steel Holdback
Screen Door.....\$7.00
No. 777, Sheet Steel Holdb'
3/4 gro.....\$9.00
No. 888, Non-Holdback, 3/4
gro.....\$9.00
Chief Ball Bearings Floor
Hinge.....50%
Ball Bearing Door.....40%
Superior Spring Hinge Co.:
Superior Floor Hinges.....40%
Spring Hinges.....40%

Wrought Iron Hinges—

Strap and T Hinges, &c.:
Light Strap Hinges.....65%
Heavy Strap Hinges.....75%
Light T Hinges.....60%
Heavy T Hinges.....40&10%
Extra Heavy T Hinges.....65&10%
Hinge Hasps.....40%
Cor. Heavy Strap.....75%
Cor. Ex. Heavy T.....65&10%
Screw Hook 6 to 12 in., 1b., 3/4¢
and Strap.....1 1/2 to 20 in., 1b., 3/4¢
12 to 36 in., 1b., 3/4¢Screw Hook and Eye:
3/4 to 1 inch.....1b. 5¢ 5/8¢
5/8 to 1 inch.....1b. 6¢ 6/8¢
1/2 inch.....1b. 7¢ 7/8¢

Hitchers, Stall—

Covert Mfg. Co., Stall Hitchers.....30&10%

Hods— Coal—

Net, per dozen.
Inch.....15 16 17 18
Galv., open.....\$2.15 2.40 2.55 2.80
Jap., open.....1.65 1.75 1.90 2.30
Galv., funnel.....2.60 2.90 3.10 3.30
Jap., funnel.....2.00 2.15 2.40 2.60

Masons' Etc.

Cleveland Wire Spring Co.:
Steel Brick, No. 162.....each \$1.05
Steel Mortar, No. 158.....each \$1.15

Hoes— Eye—

Scovill and Oval Pattern,
60&10&60&10&10%
Grub, list Feb. 23, 1899,
70&10&70&10&10%
D. & H. Scovill.....27%
Extra 10% often given on most of these Hinges.

Handled—

Crink's Weeding, No. 1, \$2.00; No. 2, \$2.50
Star Double Bit.....\$2.50

Holders— Bit—

Angular, $\frac{3}{4}$ doz.....45&10%

Broom—

Pullman Broom, $\frac{3}{4}$ doz.....\$9.00

Door—

Bardsley's, Iron, 40%; Bronze.....20%
Empire.....50%
Pullman.....25%
Richards Mfg. Co.: No. 117, Ever-ready, 40%; Nos. 118, 119, Sure Grip.....50%
Superior.....40%

File and Tool—

Nicholson File Holders and File Handles.....33 $\frac{1}{2}$ &10%

Fruit Jar—

Triumph Fruit Jar Holder, $\frac{3}{4}$ doz.....\$2.00

Nipple—

Curtis Nipple Holders.....5%

Trace and Rein—

Fernald Double Trace Holder, $\frac{3}{4}$ doz, pairs.....\$1.25
Dash Rein Holder, $\frac{3}{4}$ doz.....\$1.25

Hones—Razor—

Pike Mfg. Co., Belgian and Swaty, 50%; German.....33 $\frac{1}{2}$ %

Hooks—Cast—

Bird Cage, Reading.....50%
Clothes Line, Reading List.....50&5%
Coat and Hat Iron, Reading.....50%
Coat and Hat, Bronze Metal, Reading.....33 $\frac{1}{2}$ %
Coat and Hat, Wrightsville.....60&5%
Harness, Reading List.....50%

Wire—

Bell, Nos. 1 to 15.....80&5@80&10%
Wire U. & H. Hooks.....30&80&10%
Parker Wire Goods Co., King.....75&10%
Wire Goods Co.:
Acme, 60&10%; Chief, 75&75&10%;
Crown, 75&10&80%; Czar, 70%; Cap-itol 80%; Czar Harness, 50&10%;
Ceiling, 75&80%.

Miscellaneous—

Hooks, Bench, see Stops, Bench.
Brush, Light, doz., \$6.20; Medium, \$6.75; Heavy, \$7.55
Grass, best, all sizes, per doz., \$2.75@3.00
Grass, common grades, all sizes, per doz.....\$1.25@3.10
Hooks and Eyes:
Brass.....60&60&10%
Malleable Iron.....70&70&10%
Covert Mfg. Co. Gate and Scuttles.....25%
Turner & Stanton Co. Cup and Shoulder.....85&10%
Bench Hooks—See Bench Stops.
Cork Hooks—See Knives, Cork.

Hose, Rubber—

Garden Hose, $\frac{3}{4}$ -inch:
Competition.....ft. 6@6 $\frac{1}{2}$ &6
3-ply Guaranteed.....ft. 8@8 $\frac{1}{2}$ &8
1-ply Guaranteed.....ft. 9@9 $\frac{1}{2}$ &9
Cotton Garden, $\frac{3}{4}$ -in., coupled:
Low Grade.....ft. 6@7 9c
Fair Quality.....ft. 10@11 $\frac{1}{2}$

Irons— Sad—

From 4 to 10.....lb. 3@3 $\frac{1}{2}$ &4
Mrs. Porter's, cents per set:
Nos. 50 55 60 65
Jap'd Caps.....86 93 98 99
Tin'd Caps.....91 98 1.01 98

Bar and Corner—

Richards Mfg. Co., Bar, 60&10%;
Corner.....60%

Jacks, Wagons—

Covert Mfg. Co.:
Auto Screw.....30&10%; Steel, 80%
Lane's Steel.....30&5%
Richards' Tiger Steel, No. 130.....50&10%

Ladder—

Richards Mfg. Co., Ladder Jacks.....50%

Jointers—

Pike Mfg. Co., Saw Jointers, \$7.00.....43%

Knives—

Butcher, Kitchen, &c.—
Foster Bros.' Butcher, &c.....30%

Corn—

Columbian Cutlery Co., Wilcox
Brand Knives and Hooks.....60%

Drawing—

Standard List.....80@—%
C. E. Jennings & Co., Nos. 45 46 47
Jennings & Griffin, Nos. 41 42 43
Swan's.....66&74%
L. & I. J. White.....20&25%

Hay and Straw—

Serrated Edge, per doz.....\$5.00@5.50
Iwan's Sickle Edge..... $\frac{1}{2}$ doz. \$9.00
Iwan's Serrated..... $\frac{1}{2}$ doz. \$9.50

Miscellaneous—

Farriers'.....doz. \$2.40@2.80

Knobs—

Base, $\frac{2\frac{1}{2}}$ -inch, Birch or Maple,
Rubber Tip.....gro. \$1.25@1.40
Door, Mineral.....doz. 65@70c
Door, Por. Jap'd.....doz. 70@75c
Door, Por. Nickel.....doz. \$2.05@2.15
Bardsley's Wood Door and Shutters.....10%

Ladders, Store, &c.—

Lane's Store.....25%
Myers' Noiseless Store Ladders.....50%
Richards Mfg. Co.:
Improved Noiseless, No. 112.....50%
Climax Shelf, No. 115.....50%
Trolley, No. 109.....50%

Ladles, Melting—

L. & G. Mfg. Co.'s list, Melting and
Plumbers.....25%
P. S. & W.....40&10%
Reading.....50&10%

Lamps,—

Hammer's M. I. Hand.....45%

Lanterns—Tubular—

Regular, No. 0.....doz. \$1.00@1.50
Side Light, No. 0.....doz. \$1.25@1.75
Hinge Globe, No. 0, doz. \$1.25@1.75
Other Styles.....40&5%

Bull's Eye Police—

$\frac{3}{4}$ -inch.....\$3.75@4.00

Latches— Thumb—

Roggin's Latches, Jap'd, with
Screws.....doz. 40c

Door—

Cronk & Carrier Mfg. Co., No. 101,
 $\frac{3}{4}$ doz. \$2.00
Richards' Bull Dog, Heavy, No.
123.....50&5%
Richards' Trump, No. 127.....\$2.50

Leaders, Cattle—

Small.....doz. 45c; large, 55c
Covert Mfg. Co.: Cotton, 50%; Hemp,
45%; Jute, 55%; Sisal, 45%.

Lifters, Transom—

Reading, Iron, 50&5%; Bronze
Metal.....33 $\frac{1}{2}$ %
R. & E.....10%

Lines—

Wire Clothes, Nos. 18 19 20
100 feet.....\$2.30 1.95 1.75
75 feet.....\$1.95 1.65 1.50
Samson Cordage Works:
Solid Braided Chalk, Nos. 0 to 3.40%
Solid Braided Masons'.....30%
Silver Lake Braided Chalk, No. 0,
\$6.00; No. 1, \$6.50; No. 2, \$7.00; No.
3, \$7.50..... $\frac{3}{4}$ gr. 30%
Masons' Lines, Shade Cord, &c.:
White Cotton, No. 3 $\frac{1}{2}$, \$1.50; No. 4,
\$2.00; No. 4 $\frac{1}{2}$, \$2.50; Colors, No. 3 $\frac{1}{2}$,
\$1.75; No. 4, \$2.25; No. 4 $\frac{1}{2}$, \$2.75;
Linen, No. 3 $\frac{1}{2}$, \$2.50; No. 4, \$3.50;
No. 4 $\frac{1}{2}$, \$1.50.....30%
Tent and Awning Lines: No. 5,
White Cotton, \$7.50; Drab Cotton,
\$8.50.....20%
Clothes Lines, White Cotton: 50 ft.,
\$2.75; 60 ft., \$3.25; 70 ft., \$3.75; 75
ft., \$4.00; 80 ft., \$4.25; 90 ft., \$4.75;
100 ft., \$5.25.....30%
Turner & Stanton Co.:
Solid Braided Chalk, Masons' and
Awning Lines.....40%
Clothes Lines, White Cotton.....40%
Shade Cord, Cotton or Linen.....30%

Locks— Cabinet—

Cabinet Locks.....33 $\frac{1}{2}$ @33 $\frac{1}{2}$ @5%

Door Locks, Latches, &c—

NOTE.—Net Prices are very often made
on these goods.

Reading Hardware Co.....33 $\frac{1}{2}$ %
R. & E. Mfg. Co.....10%

Padlocks—

R. & E. Mfg. Co. Wrought Steel and
Brass.....75&10%

Sash, &c.—

Ives' Patent:
Crescent.....25%
Automatic Gravity Metal Sash, $\frac{3}{4}$
gro. \$19.50.....25%
Window Ventilating.....25%
Pullman Patent Ventilating Lock.....25%
Reading Sash Locks, Iron.....50%
Reading Sash Locks, Bronze Metal,
33 $\frac{1}{2}$ %

Machines—Boring—

Com. Up'r'l, without Augers.....\$2.00@2.25

Com. Ang'l'r, without Augers.....\$2.25@2.50

Ford Auger Bit Co.....\$22.00
Jennings' Nos. 1 and 4.....25&7 $\frac{1}{2}$ %
Millers' Falls.....5.75
Snell's, Upright, \$2.65; Angular, \$2.90
Swan's Improved.....40&10%

Corking—

Reisinger Invincible Hand Power.....
 $\frac{1}{2}$ doz. \$18.00

Forming, Bending, Etc—

Royal Forming, Bending, Crimp-
ing and Fluting, Hand Power,
each, \$20.00.....40%

Hoisting—

Moore's Anti-Friction Chain Hoist.....30%
Moore's Hand Hoist, with Lock
Brake.....20%
Moore's Cyclone High Speed Chain
Hoist.....25%

Ice Cutting—

Chandler's.....12 $\frac{1}{2}$ %

Mallets—

Hickory.....45&5@50%
Lignumvitae.....45&5@50%
Tinnier's Hickory and Apple-
wood.....doz. 45&5@50%

Mangers, Stable—

Swett Iron Works.....50%

Mats, Door—

Acme Flexible Steel.....50%
Elastic Steel (W. G. Co.), new list.....50%
Everlasting Flexible Steel.....40%

Mills, Coffee, &c.—

Enterprise Mfg. Co.:
Coffee.....20@25%
Bone, Shell and Corn.....25&10%
Parker's Columbia and Victoria.....33 $\frac{1}{2}$ %
Parker's Box and Side.....50&10%
Swift, Lane Bros. Co.....30%

Motors, Water—

Pike Mfg. Co., Tool and Knife
Grinding.....33 $\frac{1}{2}$ %

Mowers, Lawn—

NOTE.—Net prices are generally quoted

Cheapest, 10-in., \$1.80; advance
10c for each size.

Cheap, 10-in., \$2.50; advance, 10c
for each size.

Better Grade, 10-in., \$3.25; ad-
vance 25c for each size.

High Grade.....\$1.50 4.75 5.00 5.25
Continental, High and Low Wheel,
50&10%

Great American.....66 $\frac{2}{3}$ %
Great American Ball Bearing.....66 $\frac{2}{3}$ %
Quaker City.....66 $\frac{2}{3}$ %
Pennsylvania, High and Low Wheel,
50&10%

Pennsylvania, Jr., Ball Bearing
50&5%

Pennsylvania Golf, 6 Knives, Low
Wheel, 33 $\frac{1}{2}$ %; High Wheel.....45%

Pennsylvania Golf, Ball Bearing,
Knives, High Wheel.....33 $\frac{1}{2}$ %
Pennsylvania Horse, 30 and 38 inch,
33 $\frac{1}{2}$ %

Pennsylvania Pony or Two Man, 40&5%
Pennsylvania Grand Horse, 30 and
38 in.....33 $\frac{1}{2}$ %

Nails—

Wire Nails and Brads, Miscel-
laneous.....85&10%
Cut and Wire. See Trade Report.
Hungarian, Finishing, Upholster-
ers', &c. See Tacks.

Horse—

Jobbers' Special Brands,
per lb. 9c

Picture—

Brass 17 $\frac{1}{2}$ gro. 1 $\frac{1}{2}$ 2 2 $\frac{1}{2}$ 3 in.
Por. Head, gro., all sizes.....80c

Upholsters—

Brass.....30%
Plated.....30&10%

Nuts— Blank or Tapped.

Cold Punched: Off list.
Square.....5.10c
Hexagon.....5.70c
Square, C. T. & R.....5.50c
Hexagon, C. T. & R.....5.30c
Hot Punched: Off list.
Square.....5.50@5.60c
Hexagon.....5.95@6.05c

Oakum—

Best.....lb. 6 $\frac{1}{2}$ c
U. S. Navy.....lb. 6 c
Navy.....lb. 5 c
Plumbers' Spun Oakum.....2 $\frac{1}{2}$ @3 c

Oil—

Pike Mfg. Co., Stonoil.....40%

Oil Tanks—See Tanks, Oil.**Oilers—**

Steel, Copper Plated.....75&10%
Chase or Paragon:
Brass and Copper.....45&50%
Zinc.....65&10@70%
Railroad.....60&10&10%

American Tube & Stamping Co.:
Spring Bottom Cans.....70&70&10%
Railroad Oilers, &c.....60&60&10%

Hero Fruit Jar Co.:
Spring Bottom Cans.....70&70&10%
Railroad Oilers, etc.....60&60&10%

Malleable, Hammers' Improved, Nos.
11, 12 and 13, 10%; Old Pattern,
Nos. 1, 2, 3, 4, 50%.

Maple City Mfg. Co.:
Spring Bottom Cans.....70&70&10%
Railroad Oilers, &c.....60&60&10%

Openers, Can—

Triumph Shear Can Openers, doz. \$1.20

Egg—

Harigan Nickel Plate, $\frac{3}{4}$ doz., \$2.00;
Silver Plate, \$1.00.

Packing—

Asbestos Packing, Wick and
Rope, any quantity.....13c

Rubber—

(Fair quality goods.)
Sheet, C. I.....11@12c
Sheet, C. O. S.....11@12c
Sheet, C. B. S.....12@13c
Sheet, Pure Gum.....40@45c
Sheet, Red.....40@45c
Jenkins' '96, $\frac{3}{4}$ lb, 80c.....25%

Miscellaneous—

American Packing.....lb. 7@10 c
Cotton Packing.....lb. 16@25 c
Italian Packing.....lb. 9@10c
Jute.....lb. 4@4 $\frac{1}{2}$ c
Russia Packing.....lb. 9@10c

Pails, Galvanized—

Net, per dozen.
Quarts.....8 10 12 1 $\frac{1}{2}$ 16
Light.....\$1.45 1.65 1.80 2.00 2.35
Ez. heavy.....\$2.65 2.85 3.00 3.35
Rd. Bottom
Fire Pails.....1.95 2.10 2.30
Well Pails 1.95 2.15 2.35

Paint—

Dixon's Silica-Graphite, in 1 gal.
pails and 5 gal. kegs, 25%; pack-
ages of larger size.....20%

Pans— Dripping—

Standard List.....75&10&5%

Refrigerator, Galva.—

Inch.....12 14 16 18
Per doz.....\$2.00 2.25 2.50 2.75

Paper—Building Paper

Per roll.
Rosin Sized Sheathing: 500 sq. ft.
Light weight, 25 lbs. to roll, 38c
Medium weight, 30 lbs. to roll, 45c

Heavy weight, 40 lbs. to roll, 60c
Black Water Proof Sheathing,
500 sq. ft., light weight, 65c;
medium weight, 95c; heavy
weight, \$1.30.

Deafening Felt, 9 and 6 sq. ft.
to lb., ton.....\$30.00
Red Roof Roofing, 250 sq. ft.
per roll.....\$1.75

Tarred Paper—

1 ply (roll 100 sq. ft.), ton,
carloads, \$31.00; less than
carloads.....\$32.00
2 ply, (roll 100 sq. ft.), 40 lb. 40c
3 ply (roll 100 sq. ft.), 60 lb. 60c
Slater's Felt (roll 500 sq. ft.),
per ton, \$35.00; per roll.....70c

Sand Paper and Cloth—

Flint and Emery.....50&10%
Garnet Paper and Cloth.....25%

Papers—Apple—

Goodell Co.:
Family Bay State.....30 doz. \$15.00
Improved Bay State.....30 doz. \$30.00
New Lightning.....30 doz. \$7.00
Turn Table '98.....30 doz. \$6.00
White Mountain.....30 doz. \$5.00
Bonanza Improved.....each \$7.50
Dandy.....each \$10.00
New Century.....each \$20.00
Ranger.....each \$25.00
Rapid Apple Silver.....each \$100.00
Reading Hardware Co.:
Advance.....30 doz. \$1.00
Baldwin.....30 doz. \$1.00
Reading 72.....30 doz. \$3.25
Reading 78.....30 doz. \$6.25

Orange—

Goodell Co., Success.....each \$20.00

Potato—

Saratoga.....30 doz. \$7.00
White Mountain.....30 doz. \$6.50

Picks and Mattocks—

List	75%
Cronk's Handled Garden Mattock,	33%
doz., \$6.00	

Pins, Escutcheon—

Brass	.50@50¢10%
Iron	.60@60¢10%

Pipe, Cast Iron Soil—

Eastern Prices:	
Standard, 2-6 in.	.68%
Extra Heavy, 2-6 in.	.74%
Fittings, Standard and Heavy	.80%

Pipe, Merchant—

Carloads to Consumers:	
Steel	%
Blk. Galv.	%
Iron	%
Blk. Galv.	%
1/2 and 1/4 in.	
3/4 in.	
1 in.	
1 1/4 in.	
1 1/2 in.	
2 in.	
2 1/2 in.	
3 in.	
3 1/2 in.	
4 in.	
4 1/2 in.	
5 in.	
5 1/2 in.	
6 in.	
6 1/2 in.	
7 in.	
7 1/2 in.	
8 in.	
8 1/2 in.	
9 in.	
9 1/2 in.	
10 in.	
10 1/2 in.	
11 in.	
11 1/2 in.	
12 in.	

Pipe, Vitrified Sewer—

Carload lots.	
Standard Pipe and Fittings, 3 to 2 1/2 in., f.o.b. factory:	
First-class	.85%
Second-class	.87%

Pipe, Stove—

Per 100 joints.	
O. L. L. C. L.	
Wheeling Corrugating Co.'s Nested	
5 in., Uniform Color	\$6.90
6 in., Uniform Color	7.40
7 in., Uniform Color	7.40

Planes and Plane Irons—**Wood Planes—**

Bench, first qual.	.30@30¢
Bench, second qual.	.30@30¢
Molding	.25@25¢
Chapin-Stephens Co.:	
Bench, First Quality	.30%
Bench, Second Quality	.40%
Molding and Miscellaneous	.25%
Toy and German	.30%
Union	.60%

Iron Planes—

Union	.60%
Plane Irons—	
Wood Bench Plane Irons	.25%
Buck Bros.	.30%
Chapin-Stephens Co.	.30%
Union	.50%
L. & L. J. White	.20¢@25%

Planters, Corn, Hand—

Kohler's Eclipse	doz. \$7.50
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Plates—

Feloe	lb. 3% @ 1/4
Avery Stamping Co.	
Standard Steel Feloe Plates	
in 100 lb. kegs, per 100 lb., 3/4-in. to 1 1/4-in., \$4.00 net; 1 1/4-in. to 2-in., inclusive, \$3.75 net.	

Steel Pipe Hook—

Never-Break	.75¢@10%
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Pliers and Nippers—

Button Pliers	.75¢@10%
Gas Burner, per doz., 5 in., \$1.25 @ \$1.30; 6 in., \$1.35, \$1.50.	
Gas pipe, 7 1/2 in. 10 in.	
doz. \$2.00 \$2.25 \$2.75 \$3.50	
Acme Nippers	.50%
Cronk & Carrier Mfg. Co.	.60%
American Button	.75¢@10%
Improved Button	.75¢@10%
Cronk's	.60%
No. 80 Linemen's	.50%
Stub's Pattern	.85%
Combination and others	.33%
Elmore Tool Mfg. Co.:	
Gas Pliers	.70%
Wire and Cutting Pliers	.75%
Heller's Farmers' Nippers, Pincers and Tools	.40¢@10¢
P. S. & W. Tinner's Cutting Nippers	.30%
Utica Drop Forge & Tool Co.:	
Pliers and Nippers, all kinds	.40%

Plumbs and Levels—

Chapin-Stephens Co.:	
Plumbs and Levels	.30@30¢10%
Chapin's Imp. Brass Cor.	.40@40¢10%
Pocket Levels	.30@30¢10%
Extension Sights	.30@30¢10%
Machinists' Levels	.40@40¢10%
Diston & Sons:	
Shifting Levels	.60¢10%
Pocket Levels	.60¢10%
Plumbs and Levels	.60¢10%
Track Level and Gauge	.60¢10%

Points, Glaziers—

Rulk and 1 lb. papers	lb. 9 ¢
16 lb. papers	lb. 10 ¢
3 1/2 lb. papers	lb. 11 ¢

Police Goods—**Manufacturers' Lists .25@25¢5%****Polish—Metal, Etc—**

Ladd Co.:	
Putzade Liquid, 1/2 gro., 1/4 pts.	\$12.00; 1 pts., \$20.00; 1 qts., \$40.00;
doz., 1/2 gals., \$6.35; 1 gals., \$12.00.	
Prestoline Liquid, No. 1 (1/2 qt.), 1/2 doz., \$3.00; No. 2 (1 qt.), \$5.00.	
Prestoline Paste	.40%
George William Hoffman:	
U. S. Metal Polish Paste, 3 oz. boxes, 1/2 doz. 50¢; 1/2 gr. \$1.50;	
1/2 lb boxes, 1/2 doz. \$1.25; 1 lb boxes, 1/2 doz. \$2.25.	
U. S. Liquid, 8 oz. cans, 1/2 doz., \$1.25.	
Barkeepers' Friend Metal Polish, 1/2 doz., \$1.75.	

Stove—

Black Eagle Benzine Paste, 5 lb cans, 1/2 doz. 10¢	
Black Eagle, Liquid, 1/2 pt. cans, 1/2 doz. 75¢	
Black Jack Paste, 1/2 lb cans, 1/2 gr. \$9.00	
Black Kid Paste, 5 lb cans, each, \$0.65	
Ladd's Black Beauty Liquid, per 100 lbs.	.75
Joseph Dixon, 1/2 gr. \$5.15	.10%
Dixon's Plumbago, 1/2 lb 8¢	
Fireside	10%
Gem, 1/2 gr. \$1.50	10%
Japanese	10%
Jet Black	10%
Peerless Iron Enamel, 10 oz. cans, 1/2 doz. \$1.50	

Window Polish—

Benj. P. Forbes:	
Glasbrite, 1 lb cans, each	.75¢
Glasbrite, Factory, 10 lb pails, 1/2 lb	.25¢

Poppers, Corn—

1 qt. Square, doz. \$0.80; gro. \$9.75	
1 qt. Round, doz. \$0.90; gro. \$10.00	
1 1/2 qt. Square, doz. \$1.20; gro. \$12.00	
2 qt. Square, doz. \$1.50; gro. \$15.00	

Pets, Glue—

Enameled	.30¢10%
Tinned	.30¢5%

Powder—

Black Sporting:	
Kegs (25 lb.), \$5.00@5.50	
Half Kegs (12 1/2 lb.), \$2.75@3.00	
Quarter Kegs (6 1/4 lb.), \$1.50@1.65	
Canisters, pounds, .25	
Canisters, 1/2 pounds, .15	
Canisters, 1/4 pounds, .12	

NOTE.—Prices vary according to territory.

Presses—

Enterprise Mfg. Co., Fruit, Wine and Jelly	.20@25%
Lard Presses and Sausage Stuffers	.25@25¢7 1/2%

Seal Presses—

Morrill's No. 1, 1/2 doz., \$20.00	.50%
Morrill's Pocket, \$20.00	.50%

Pruning Hooks and Shears

See Shears.

Pullers, Nail, Etc.—

Elmore Tool Mfg. Co.:	
Drop Forged Tack Claws, No. 10	.50¢10%
Standard Tack Claws, No. 10	.33¢@7 1/2%
Nail Pullers	.40%
Miller's Falls, No. 3, 1/2 doz., \$12.00	
Morrill's No. 1, Nail Puller, 1/2 doz.	.33¢@10%
\$20.00	.50%
Pearson Spike Puller, each, \$15.00	.25%
Parrot Tack and Stub Pullers, 1/2 doz.	.12
The Seranton Co., Case Lots:	
No. 2B (large)	.55
No. 3B (small)	.50

Pulleys, Single Wheel—

Inch	1 1/2 1 3/4 2 3
Acting or Tackle,	
doz. \$0.30 .45 .60 1.05	
Hay Fork, Siret or Solid Eye,	
doz., 4 in., \$1.25; 5 in., \$1.55	
Inch	2 2 1/4 2 1/2
Hot House, doz.	.85 .85 1.20
Inch	1 1/2 1 3/4 2
Screw, doz.	.80 .16 .19 .30
inch	.75 .8 2 1/4 2 1/2
Side, doz.	.80 .25 .40 .55 .60
Inch	1 1/2 1 3/4 2 2 1/2

Sash Pulleys—

Common Frame; Square or Round End, per doz., 1 1/4 and 2 in.	.75@20¢
Auger Mortise, no Face Plate, per doz., 1 1/4 and 2 in.	.20¢@21¢
Acme, No. 35, 1 1/4 in., 19¢; 2 in., 20¢	
American Pulley Co.:	
Wrought Steel American Plain Axle	.50¢10%
Wrought Steel, Eagle, 1/2 doz.	
1 1/2 in., 17¢; 2 in., 20¢	.24
Top Notch, Electrically Welded, Nos. 3 and 4, 1/2 doz.	.19¢
Common Sense, 1/2 doz.	.20¢
Merit, 1/2 doz., 2 1/4 in.	.37¢

Fox-All-Steel, Nos. 3 and 7, 2 in.	doz. 50%
Grand Rapids All Steel Noiseless	.50%
Niagara, No. 3, 1 1/4 in., 19¢; 2 in., 20¢	
No. 26 Troy, 1 1/4 in., 14¢; 2 in., 18¢	
Star, No. 26, 1 1/4 in., 19¢; 2 in., 20¢	
Tackle Blocks—See Blocks.	

Pumps—

Cistern	.60%
Pitcher Spout	.75¢10¢5¢10
Wood Pumps, Tubing, &c.	.50%
Barnes Mfg. Co.:	
Intl. Acting (low list)	.50%
Pitcher Spout	.80%
Daisy Spray Pump	doz. \$6.50
Goulds Mfg. Co.:	
Double-Acting Thresher Tank	\$5.00
Diagram No. 3, Side Suction	\$14.50
Empire, Advance, Success, D. A. Shallow and Deep Well (low list)	.50%
Spraying and Whitewashing	\$2.15
F. E. Myers & Bros. (low lists):	
Double Acting Force and Lift:	
Cistern and Well; House; Windmill; Ratchet Handle; Pump Stands; Hydro-Pneumatic; Bulldozer Power; Spray; Ashland Force and Lift	.50%
Thresher Tank—Myers and Faultless Low Down Tank	\$5.90
Century Low Down Tank, No. 170	\$5.25
Century Low Down Ratchet Handle Tank, No. R470	\$5.50

Pump Attachments—

Chicago Hdw. & Fdy. Pump Spout Attachments, each	\$9.27
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Pump Leathers—

Plunger and Valve Leathers—Per gro.:	
No. 1	2 3 4
\$5.00 6.00 7.00 8.00	
Cup Leathers—Per 100:	
Inch	2 1/2 3 3 1/2 4
\$5.00 7.00 9.00 12.00	

Punches—

Saddlers' or Drive, good, doz. 60¢@7¢	
Spring, single tube, good quality	.17%
Revolving (4 tubes)	doz. \$3.50
Bemis & Call Co.'s Cast St'l Drive	.50%
Elmore Tool Mfg. Co.:	
Machinists' Center	.40%
Timmers' Solid, 50¢; Peck	.50%
Morrill's Nos. 1A, 1A, 1B, 1C, 1D, \$15.00	.50%
Hercules, 1 die, each \$5.00	.50%
Niagara Hollow Punches	.40%
Niagara Solid Punches	.55%
Timmers' Hollow, P. S. & W. Co.	.25%
Timmers' Solid, P. S. & W. Co., doz., \$1.4	.40¢10%

Rail—Barn Door, &c.—

Sliding Door, Painted Iron, 2 1/2 @ 2 3/4	
Sliding Door, Wrought Brass, 1 1/2 in., lb., 36¢	.30%
Cronk's:	
Double Braced Steel Rail, 1/2 ft. 2 1/4	
O. N. T. Rail	.24¢
Griffin's:	
xxx, 100 ft., 1 x 3-16 in., \$3.25;	
1 1/4 x 3-16 in., \$3.75.	
Hinged Hanger, 100 ft., 1 x 3-16 in., \$3.50; 1 1/4 x 3-16 in., \$4.00.	
Lane's:	
Hinged Track, 100 ft., \$3.45	
O. S. T., 100 ft., 1 in., \$3.12 1/2;	
1 1/4 in., \$3.45; 1 1/2 in., \$4.00.	
Standard, 1 1/4 in.	100 ft. \$4.00
Lawrence Bros.:	
1 x 3-16 in., 100 ft., \$7.50; 1 1/4 x 3-16 in., \$8.75	
Trolley, No. 301, 1/2 ft.	.9¢
McKinney's:	
Hinged Hanger Track, 1/2 ft., 11¢	
1 x 3-16 Track	.55¢
Myers' Station Track	.60¢10%
Richards Mfg. Co.:	
Common, 1 x 3-16 in., \$3.00; 1 1/4 x 3-16, \$3.25; 1 1/2 x 3-16, \$3.50.	
Special Hinged Hanger Rail, 60¢10%	
Gauge Trolley Track, 1/2 ft. No. 31, 9¢; No. 32, 14¢; No. 33, 20¢.	
No. 50	.60¢10%
Nos. 61, \$3.00; 62, \$3.25; 63, \$3.50; 64, \$4.00; 45, \$3.25; 46, \$3.50; 49, No. 1, \$3.25; 49, No. 2, \$3.50.	

Rakes—

Cronk's:	
Steel Garden; Champion, 1/2 doz.	
12-tooth, \$3.75; 14-tooth, \$4.00; 16-tooth, \$4.25; Ideal, 1/2 doz.	
12-tooth, \$3.00; 14-tooth, \$3.30; 16-tooth, \$3.60.	
Victor, 12-tooth, \$2.25; 14-tooth, \$2.50; 16-tooth, \$2.75.	
Queen City Lawn, 1/2 doz., 20 teeth, \$2.35; 24, \$2.50.	
Anticlog Lawn, 1/2 doz.	.net
Malleable Garden, 1/2 doz.	.70¢10%
Ideal Steel Garden, 1/2 doz., 12 teeth, \$15.00; 11, \$16.00; 16, \$18.00.	
Kehler's:	
Jumbo Lawn, 36-tooth, 1/2 doz. \$5.00	
Lawn Queen, 20-tooth, 1/2 doz. \$2.65	
Lawn Queen, 24-tooth, 1/2 doz. \$2.75	
Paragon, 20-tooth, 1/2 doz. \$2.40	
Paragon, 24-tooth, 1/2 doz. \$2.50	
Steel Garden, 14-tooth, 1/2 doz. \$2.40	
Malleable Garden, 14-tooth, 1/2 doz.	
\$1.75@2.00	

Rasps, Horse—

Diston's	
Heller Bros.	.70¢50¢70¢100¢
Livestock Bros. Gold Medal	.70
McCaffrey's American Standard	.60¢100¢
New Nicholson	.70¢100¢75¢
See also Files.	

Razors—

W. H. Compton Shear Co.	.30%
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Reels, Fishing—

Hendryx:	
M 6, Q 6, A 6, B 6, M 9 1/4, M 16	
Q 16, A 16, B 16, 4008, Rubber	
Populo, Nicheled Populo	
Aluminum, German Silr., Bronze	
1210 N. 124 N.	
3004 N. 06 N. 6 RM. G 9	
4 N. 6 PN. 24 N. 26 PN.	
2904 P. 33 1/2	2904 PN. 33 1/2
0924 N. 33 1/2	0924 N. 33 1/2
00204 N. 33 1/2	00204 N. 33 1/2
986 PN. 2904 N. 974 PN.	
5009 PN. 5009 N.	
Competitor, 102 P. 102 PN. 202 P.	
202 PN. 102 PR. 202 PR.	
304 P. 304 PN. 00304 P. 00304 PN.	

Registers—

Japanned, Electroplated and Bronzed	.70%
White Porcelain Enamel	.50¢10%
Solid Brass or Bronze Metal	.40%

Registers—

Single Action	.95¢@1.00
Double Action, except 4 1/2 cal.	\$2.00
Double Action, 4 1/2 caliber	.32.00
Automatic	.31.00
Hammerless	.31.00

Riddles, Hardware Grade

16 in.	per doz. \$2.50¢12.75
17 in.	per doz. \$2.75¢13.00
18 in.	per doz. \$3.00¢13.25

Rings and Ringers—**Bull Rings—**

Steel	.70 0.75 0.80 doz.
Copper	\$1.10 1.25 1.65 doz.

Hog Rings and Ringers—

Stocks and Dies—

Blacksmiths'	50@50&10%
Curtis Revolver Ratchet Die Stock	25%
Derby Screw Plates	25%
Green River	25%
Lightning Screw Plate	25%
Little Giant	25%
Reece's New Screw Plate	25%

Stoners, Cherry—

Enterprise	25@30%
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Stones, Axe—

Pike Mfg. Co., Axe Stones (all kinds)	33 1/2%
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Glass Cutters' Stones—

Pike Mfg. Co., Glass Cutters' Stones and Supplies	40%
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Stones, Oil, &c.—

Pike Mfg. Co., 1907 list:	
Arkansas St., No. 1, 3 to 5 1/2 in.	\$2.50
Arkansas St., No. 1, 5 1/2 to 8 in.	\$3.50
Arkansas Slips No. 1	\$1.00
Lily White Washita, 4 to 8 in.	60¢
Rocky Red Washita, 4 to 8 in.	60¢
Washita St., Extra, 4 to 8 in.	50¢
Washita St., No. 1, 4 to 8 in.	40¢
Washita St., No. 2, 4 to 8 in.	25¢
Lily White Slips	30¢
Rosy Red Slips	30¢
Washita Slips, Extra	30¢
Washita Slips, No. 1	70¢
Washita Slips, No. 2	40¢
India Oil Stones (entire list)	33 1/2%
Quickcut Emery and Corundum Oil Stone, Double Grit	40%
Quickcut Emery and Corundum Oil Stone, Double Grit	33 1/2%
Quickcut Emery Rubbing Bricks	40%
Hindostan No. 1, Small	8¢
Turkey Oil Stones, Extra, 5 to 8 in.	20¢
Queer Creek Stones, 4 to 8 in.	20¢
Queer Creek Slips	10¢
Sand Stone	6¢

Scythe Stones—

Pike Mfg. Co., 1907 list:	
Black Diamond S. S.	\$12.00
Lamolle S. S.	\$11.00
White Mountain S. S.	\$10.50
Green Mountain S. S.	\$7.00
Extra Indian Pond S. S.	\$8.00
No. 1 Indian Pond S. S.	\$7.50
No. 2 Indian Pond S. S.	\$5.00
Leader Red End S. S.	\$5.00
Quick Cut Emery	\$10.00
Pure Corundum	\$18.00
Crescent	\$7.00
Emery Scythe Rifles, 2 Coat	\$8.80
Emery Scythe Rifles, 3 Coat	\$11.00
Emery Scythe Rifles, 4 Coat	\$13.20
Balance of 1907 list 33 1/2%	
Lectro (Artificial)	\$12.00 33 1/2%
\$12.00	33 1/2%
Lightning (Artificial)	\$18.00 33 1/2%

Stoppers, Bottle—

Victor Bottle Stoppers	\$9.00
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Stops—Bench—

Millers Falls	15&10%
Morrill's, No. 1, \$10.00	50%
Morrill's, No. 2, \$12.50	50%
Seymour Smith & Son's	60%

Door—

Chapin-Stephens Co.	50@50&10%
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Plane—

Chapin-Stevens Co.	20%
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Straps—Box—

Acme Embossed, case lots	20&10&10%
Cary's Universal, case lots	20&10&10%

Stoppers, Razor—

Pullman Safety Razor Blade, doz.	\$8.50
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Stuffers, Sausage—

Enterprise Mfg. Co., Stuffers and Lard Presses	25@25&7 1/2%
P. S. & W. Co.	40&10&5%

Swings, Lawn—

Myers' Low Down Roller	\$6.25
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Tacks, Finishing Nails, &c.

American Carpet Tacks	90&25@%
American Cut Tacks	90&25@%
Suedes' Cut Tacks	90&30@%
Suedes' Upholsterers'	90&35@%
Gimp Tacks	90&35@%
Lace Tacks	90&35@%
Trimmers' Tacks	90&30@%
Looking Glass Tacks	65@%
Bill Posters' and Railroad Tacks	90&10@%
Hungarian Nails	80@%
Finishing Nails	70@%
Trunk and Clout Nails	75&50@%

NOTE—The above prices are for straight weights

See also Nails, Wire.

Double Pointed—

Double Pointed Tacks	90&6 tens@%
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Tapes, Measuring—

American Asess' Skin	50@%
Patent Leather	25@30&5%
Steel	33 1/2&5%
Chesterman's	25@35&5%
Keuffel & Esser Co.	
Favorite, Ass Skin	40&10@50%
Favorite, Duck and Leather	25&30@25&10%
Metallic and Steel, lower list	35@
35&5%; Pocket, 35@35&5%.	

Lufkins:

Asses' Skin	40&10@50%
Metallic	30@30&5%
Patent Bend, Leather	25&30@25&10%
Pocket	40&40&5%
Steel	33 1/2@35%

Wichsch & Hilger:

Chesterman's Metallic, No. 34L	25%
etc.	25%
Chesterman's Steel, No. 1038L	35%
etc.	35%

Teeth, Harrow—

Steel Harrow Teeth, plain or headed, 3/4-inch and larger per 100 lb.	\$2.55 @ \$2.80
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Thermometers—

Tin Case, Cabinet, Flange, Dairy, &c.	30@55%
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Ties, Bale—Steel Wire—

Single Loop	82 1/2@10%
Monitor, Cross Head, &c.	70&5 1/2%

Tinware—

Stamped, Japanned and Pieced, sold very generally at net prices.	
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Tops, Chimney—

Iwan Volcano Chimney Tops	55%
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Tools—Coopers'—

L. & I. J. White	20@20&5%
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Ice Tools—

Gifford-Wood Co.	15%
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Saw—

Atkins' Cross Cut Saw Tools	35%
Simond's Improved	33 1/2%
Simonds' Crescent	30%

Ship—

L. & I. J. White	25%
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Torches—

Hammers, Engine, per doz.	\$1.50
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Traps—Fly—

Balloon, Globe or Acme, doz.	\$1.15 @ \$1.25
Harper, Champion or Paragon, doz.	\$1.25 @ \$1.40
gro.	\$13.00 @ \$13.50

Game—

Simulation Onida	75@10%
Newhouse	50&5%
Hawley & Norton	65&10%
Victor	75@75&10%
Onida Community Jump	70&5%
Stop Thief	60%
Tree Trap	60%
Hector	75@75&5%

Mouse and Rat—

Mouse, Wood, Choker, doz. holes, 12¢	
Mouse, Round or Square Wire, doz.	85@90¢

Trowels—

Disston Brick and Pointing	25%
Disston Plastering	20%
Disston "Standard Brand" and Garden Trowels	30%
Kohler's Steel Garden Trowels, per doz.	\$1.80
Never-Break, Forged Steel Garden Trowels in 1 doz. boxes, per doz.	\$6.50
Wm. Rose & Bros., Bricklayers' and Plasterers'	25&5%
Woodrough & McParlin, Plastering	25%

Trucks, Warehouse, &c.—

McKinney Trucks	each, net \$10.00
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Tubs, Wash—

Net, per gross.	No. 0 1 2 3
Galvanized	\$29.00 \$48.00 \$55.00 \$62.00

Twine, Miscellaneous—

Flax Twine:	
No. 9, 1 1/4 and 1 1/2 lb. Balls	21@23¢
No. 12, 1 1/4 and 1 1/2 lb. Balls	19@21¢
No. 18, 1 1/4 and 1 1/2 lb. Balls	16@18¢
No. 24, 1 1/4 and 1 1/2 lb. Balls	15 1/2@17 1/2¢
No. 36, 1 1/4 and 1 1/2 lb. Balls	15@17¢
Chalk Line, Cotton	1 1/2 lb. 24@29¢
Cotton Mops, 6, 9, 12 and 15 lb. to doz.	8 1/4 @ 21¢
Cotton Wrapping, 5 Balls to lb. according to quality	13 1/2 @ 21¢
American 3-Ply Hemp, 1 lb. Balls	17 1/2 @ 18¢
India 3-Ply Hemp, 1 1/4 lb. Balls	17 1/2 @ 16¢
Balls (Spring Twine)	7 1/2 @ 9¢
India 3-Ply Hemp, 1 lb. Balls	7 1/2 @ 9¢
India 3-Ply Hemp, 1 1/4 lb. Balls	7 1/2 @ 9¢
2, 3, 4 and 5-Ply Jute, 1 1/2 lb. Balls	9@11¢
Mason Line, Linen, 1 1/2 lb. Balls	17¢
No. 20 Mattress, 1 1/4 and 1 1/2 lb. Balls, according to quality	30@36¢
Wool, 3 to 6 ply	B 6¢; A 7 1/2¢

Vises—

Solid Box	60@60&10%
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Parallel—

Fisher & Norris Double Screw Leg, each, Nos. 2, \$10.50; 3, \$16.00; 4, \$20.50; 5, \$27.00; 6, \$32.00	20%
Fisher-Proofs Bench and Woodworkers' Vises, No. 0, \$3.80; No. 1, \$5.30; No. 2, \$8.25; No. 3, \$10.50; No. 4, \$13.50	40%
Merrill's	25%
Millers Falls Oval Slide Pattern	60&10%
Parker's: Victor, 20@25%; Regulars	20@25%
Combination Pipe	40@45%
Prentiss Vise Co.: Patent, Bicycle, Shepard, Gipsy, Adj. Column, Lewis Adj. Jaw	25%
Rapid Transit, Heavy Chipping	30%
Bull Dog, Anchor Line, Yankee Quick Lever, Lewis Solid Jaw, Eclipse Wrench Attachment	40%
Monarch	45%
Vise Jaw Caps	10%
Pullman Automatic Bench, per doz. No. 1, \$7.50; No. 2	\$9.50

Pipe—

Curtis & Curtis Malleable	25%
Parker's Combination: 87 Series, 60%; 187 Series, 60&5%; No. 870, 40%	55@60%
Prentiss Vise Co.: Blake Combination, Prentiss Combination, Prentiss	60%
Malleable; Monarch Combination	65%
Rex Combination	70%
Peerless Pipe Grip	25%

Saw Filers

Disston's D 3 Clamp and Guide, per doz., \$24.00, 30%; Clamps	50&10%
Reading	50&10%

Wood Workers—

Prentiss Cabinet Makers'	40%
Wyman & Gordon's Quick Action, 6 in., \$6.00; 9 in., \$7.00; 14 in., \$8.00	33 1/2%

Wads—Price per M.

B. E., 11 up	60¢
B. E., 9 and 10	70¢
B. E., 8	80¢
B. E., 7	80¢
P. E., 11 up	\$1.00
P. E., 9 and 10	1.25
P. E., 8	1.50
P. E., 7	1.50
Ely's B. E., 11 and larger	\$1.70 @ \$1.75
Ely's P. E., 12 to 20	\$3.00 @ \$3.25

Ware, Hollow—

Cast Iron, Hollow—

Stove Hollow Ware:

Enameled	45&10%
Ground	50&5%
Plain or Unground	60%
Country Hollow Ware, per 100 lbs	\$2.75 @ \$3.00
White Enameled Ware: Maslin Kettles	65&10%
Covered Ware: Tinned and Turned	35&10%
Enameled	45&10%
See also Pots, Glue.	

Enameled—

Agate Nickel Steel Ware	35 1/2%
El-an-gue	60&10%
Iron Clad Ware	70&10%
Lava and Vulcanite, Enameled	40&10%

Tea Kettles—

Galvanized Tea Kettles:

Inch	6 7 8 9
Each	45¢ 50¢ 55¢ 60¢

Steel Hollow Ware—

Avery Stamping Co.: Never-Break Spiders and Grid-dies	65&10%
Steel Kettles, Maslin Scotch Bowls, Tin'd	60%
Steel Stew Pans, Stew Pots, etc., Porcelainized	50%
Cleveland Stamping & Tool Co.: Solid Steel Spiders and Grid-dies	65&5%
Solid Steel Kettles	60&5%

Warmers, Foot—

Pike Mfg. Co., Soapstone	40@40&10%
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Washboards—

No.	per doz.
800—Brass King, Single Surface, Open Back	\$3.00
801—Brass King, Single Surface, Open Back	\$2.50
802—Brass Junior, Single Surface, Open Back	\$2.25
882—White Hen, Spiral Crimp Glass	\$3.15
964—Royal Blue Enamel Single Surface, Ventilated Back	\$3.25
772—Our Best, Single Zinc, Soap Drainer	\$3.25
722—Soap Saver, Single Zinc, Iron Top	\$3.35
109—Northern Queen, Single Zinc, Perforated, Open Back	\$3.00
131—Universal, Single Zinc, Extra Family Size, Ventilated Back	\$2.50
710—Regal, Single Zinc, Extra Family Size, Ventilated Back	\$2.50
760—Rauner Globe, Single Zinc, Ventilated Back	\$2.25
57—Peerless, Double Zinc, Spring Protector	\$3.70
56—Red Cross, Double Zinc, Spring Protector	\$3.60
17—North Star, Solid Zinc, Spring Protector	\$3.60
797—Jewel, Single Zinc, Pail Size	\$1.25

Washers—Leather, Axle—

Solid	90@90&10%
Patent	90@90&5%
Coll: 1/4 1 1/4 1 1/4 1 1/4 inch.	
9¢ 1¢ 11¢ 11¢ per box.	

Iron or Steel—

Size bolt	5-16 3/8 1/2 5/8 3/4
Washers	\$1.90 1.00 2.70 2.50 2.30

The above prices are based on \$6.50 off list.
In lots less than one keg add 1/4¢ per lb.; 5-lb. boxes add 1/4¢ to list.

Avery Stamping Co.: Standard, in 200 lb. kegs, \$6.00 per 100 lb. disc.; in 100 lb. kegs add 10¢ net per 100 lb.; in 5 or 10 lb. boxes, add 50¢ net per 100 lb.; in 1 lb. boxes, add \$1.00 net per 100 lb.

Cast Washers—

Over 1/2-inch, barrel lots, per lb. 1 1/4 @ 1 1/2%

Wedges—

Oil Finish	lb., 2 1/4 @ 2 1/2%
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Weights—Hitching—

Covert Mfg. Co.	35%
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Sash—

Per net ton, Eastern market, \$25.00 net

Wheels, Corundum and Emery—

Pike Mfg. Co., Corundum, 65%; Emery	75%
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Well—

8-in., \$2.00; 10-in., \$2.30; 12-in., \$3.00; 14-in., \$4.45.	
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Wire and Wire Goods—

Market and Stone Wire in Bundles:

Bright and Annealed:	
9 and coarser	80%
10 to 18	80&10%
19 to 26	80&10&2 1/2%
27 to 36	80&5%

Galvanized:

9 and coarser	75&10%
10 to 16	75&10%
17 to 26	72&10%
27 to 36	72&2%

Coppered:

9 and coarser	75&10%
10 to 26	75&10%
27 to 36	70&10&5%

Tinned:

